Service Manual

ViewSonic P810-3

Model No. P810-3

21" Digital Controlled Color Monitor
Professional Series

(Rev. 1 - January 1998)

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.

It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.

Products powered by electricity should be serviced or repaired only by experienced professional technicians.

Any attempt to service or repair the product or products dealt within this service information by anyone else could result in serious injury or death.

SAFETY PRECAUTIONS

1 CAUTION:

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guide lines.

2 SAFETY CHECK

Care should be taken while servicing this CRT display because of the high voltage used in the deflection circuits. These voltages are exposed in such areas as the associated flyback and yoke circuits.

3 FIRE & SHOCK HAZARD

3-1 Insert an isolation transformer between the CRT display and AC power line before servicing the chassis.

3-2 In servicing pay attention to original lead dress especially in the high voltage circuit. If a short circuit is found, replace all parts which have been overheated as a result of the short circuit.

3-3 All the protective devices must be reinstalled per original design.

3-4 Soldering must be inspected for possible cold solder joints, frayed leads, damaged insulation, solder splashes or sharp solder points. Be certain to remove all foreign material.

4 LEAKAGE CURRENT COLD CHECK

4-1 Unplug the AC cord and connect a jumper between the two prongs on the plug.

4-2 Turn the CRT display power switch "on" .

4-3 Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metallic part on the CRT display such as the metal frame, screwheads, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be 1.8 megohm minimum.

5 LEAKAGE CURRENT HOT CHECK

5-1 Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during this check.

5-2 Connect a 1500 ohm, 10 watt resistor, paralleled by a 0.15μF capacitor between each exposed metallic part and a good earth ground (as shown in Fig.1).

5-3 Use an AC voltmeter with 1000 ohm/volt or more sensitivity and measure the AC voltage across the combination 1500 ohm resistor and 0.15μF capacitor.

5-4 Move the resistor connection to each exposed metallic part and measure the voltage.

5-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.

5-6 Voltage measured must not exceed 7.5 volt RMS, from any exposed metallic part to ground A leakage current tester may be used in the above hot check, in which case any current measured must not exceed 5.0 milliamp. In the case of a measurement exceeding the 5.0 milliamp value, a rework is required to eliminate the chance of a shock hazard.

Note: High voltage is present when this CRT display is operating. Always discharge the anode of the picture tube to the display chassis to prevent shock hazard.

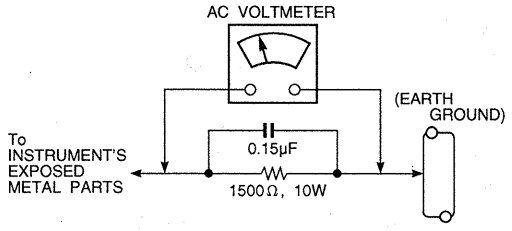


Fig.1

6 IMPLOSION PROTECTION

Picture tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage and scratching during installation. Use only Panasonic replacement picture tubes.

7 X-RADIATION

WARNING : The only potential source of X-Radiation is the picture tube. However when the high voltage circuitry is operating properly there is no possibility of X-Radiation problem. The basic precaution which must be exercised is to keep the high voltage at the following factory-recommended level.

Note: It is important to use an accurate periodically calibrated high voltage meter.

7-1 The procedure for adjustment high voltage is as shown on page 23.

7-2 If can not be adjust 24.5 kV at immediate service is required to prevent the possibility of premature component failure.

7-3 To prevent X-Radiation possibility it is essential to use the specified picture tube.

IMPORTANT SAFETY NOTICE

There are special components used in this CRT displays which are important for safety. These parts are identified by the international symbol ⚠ on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent X-RADIATION, shock, fire or other hazards. Do not modify the original design or this will void the original parts and labor guarantee.

GENERAL INFORMATION

1. OUTLINE

This monitor is 21 inch (20.0viewable)multi-scan color CRT display with the following features.
IIC Bus Micro processor & Enhanced OSD are newly introduced, which optimize the function.

2. FEATURES

2-1 SSP-Lite LSI (Advanced Super Signal Processor) mounted

Precise wave forms are generated for the correction of each geometric distortion.

2-2 Power Saving

Built-in Power Saving function based on VESA-DPMS standard.
Power energy shall be saved by controlling the circuit in accordance with power saving signal from computer.

2-3 OSD (on screen display) function

OSD (5 languages & multi location) is new and excellent man-machine interface.
Anyone is able to set up the picture as he likes through icon & four keys in front bezel.

2-4 Self Test function

Self testing picture comes out by pushing any key in the case of no-connection with computer or power saving operation.
This function shows if monitor is alive or not and can be used for self aging test.

2-5 Ergonomic design

- Low emission design to meet MPR Ⅱ & TCO'92
- ESF (Electro static field) free coating on CRT
- Tilt & swivel stand is mounted

2-6 Multi scan with digital technology

8 bit micro computer controls the circuit operation to meet with wide range signal of f_H=30~95 kHz and f_V =50~180 Hz.
So VGA, SVGA, XGA(1024x768), SXGA (1280x1024) and UXGA (1600x1200) are applicable.

2-7 1 Factory presets, (+7 Reservation), 13 user memories.

- 1 standard mode is preset at the factory.
- 7 modes are reserved at the factory.
- 13 user memories are available to set the user's own timing and display information.

2-8 Flat Face and fine dot pitch

Flat face CRT with fine dot pitch of 0.25 mm (Horizontal:0.218mm / Vertical:0.130mm)gives a crispy and comfortable sight of the screen.

2-9 Superior display performance

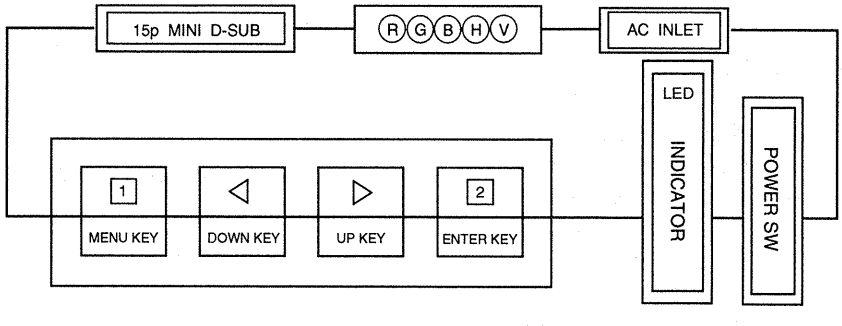
- Good focus by sophisticated gun and dynamic focus circuit
- High contrast
- Minimized distortion by digital correction circuit
- Good convergence
- Users enjoy full scan image for graphics .

2-10 Special function

- VESA DDC1/2B (Display Data Channel) compatible
- Rotation control circuit
- Multi color:9300k, 7500k & 6500k & 5000k are preset at the factory
- MOIRE Reduction circuit

SPECIFICATION

1. DIAGRAM



1.1 POWER SW, LED, [1]-key (MENU), ◁-key (DOWN), ▷-key (UP), and [2]-key (ENTER) are located on the front panel.

1.2 Signal cable and AC inlet are located on the back side of the cabinet.

1.3 OSD menu includes the following function.

Contrast / Brightness
Size & Position H.Position H.Size V.Position V.Size
Geometry V.Pincushion Side
Pin.Bal.,Trapezoid,Parallelogram
Tilt View Match Color
View Meter / Degauss Input Select
Memory Recall Video Level
Moire reduction H.Moire,v.Moire
OSD Language / Position

※) CONTRAST can be directly controlled with ◁/▷-key.

※) With sync signal, OSD menu appears by pushing [1]-key and [2]-key.
Without sync signal, self test menu appears by pushing any key.

※) Size & Posi·····H.POSITION, H.SIZE, V.POSITION, V.SIZE

※) GEOMETRY·····V.PINCUSHION/ BALANCE, TRAPEZOID, PARALLELOGRAM

※) Video clamp pulse phase can be changed by simultaneously operation for [1] and [2] key .

2. MECHANICAL SPECIFICATIONS

..... refer to the attached drawing

2.1 Dimension Height : 487 mm (19.2") (typ.)
Width : 505 mm (19.9") (typ.)
Depth : 519 mm (20.4") (typ.)

2.2 Net Weight : 27.5 Kg (60.5lbs) (typ.)

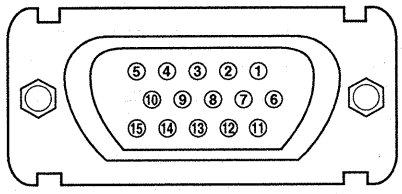
2.3 Maximum Viewable Phosphor Display Area:
: 406.4×304.8mm(min.)
(diagonal = 508.0mm min.)

3. CONNECTORS

3.1 Signal connector:
15P Mini D-Sub 15P and BNC (R. G. B. H. V)

3.2 AC inlet: CEE 22 typed connector

<15P Mini D-Sub 15P PIN assignment>



1 ... RED	6 ... GROUND	11 ... GROUND
2 ... GREEN	7 ... GROUND	12 ... SDA (DDC)
3 ... BLUE	8 ... GROUND	13 ... H. SYNC.
4 ... GROUND	9 ... – (OPEN)	14 ... V. SYNC.
5 ... GROUND (DDC)	10 ... GROUND	15 ... SCL (DDC)

4. CRT SPECIFICATIONS

Part No.	M51KYY540X
Type	21", 90°, 29ø.in-line gun (Viewable20.0"),
Dot Pitch	Hrizontal:0.218mm/Vartical:0.130mm
Phosphor	R, G, B short persistence(Hi-Eu RED)
	Red x=0.635 typ, y=0.333 typ Green x=0.280 typ, y=0.595 typ Blue x=0.152 typ, y=0.063 typ
Bulb	DARK TINT
Face coating	NEW AGRAS COAT
Total Transmission	39.5%

5. ELECTRICAL SPECIFICATIONS

5.1 Standard conditions ... Except special items

Display image	Green, full "H" characters with a border line. (7 x 9 dots) Video signal : 100% duty Display area : 392 mm x 294 mm
Video signal level	0.7 V pp
Contrast, Brightness	Contrast : Max., Brightness : detent point
Ambient Temperature	20±5°C (68 ± 9°F)
Input Voltage	AC 120 V, 60 Hz or AC 220 V, 50 Hz
Terrestrial magnetism	Vertical field : northern hemisphere field 40μT Horizontal field : no field
Viewing direction	Parallel to the CRT axis
Measurements	After an initial warming up time of more than 30 minutes.
Ambient light	200±50 IX
Display mode	1600 x 1200 (93.75 kHz, 75.00 Hz)

5.2 POWER

5.2.1 Power supply ... Commercial power source

Input voltage	AC 90 - 132 V, AC 198 - 264 V
Power frequency	50 Hz ± 3 Hz, 60 Hz ± 3 Hz
Input current	2.7 A Max. (100 V)
Inrush current (at 20° C)	40 A op note:Cold Start
Power consumption	145 W Typ.160 W max.(AC 100V)

5.2.2 Power Management for Power Saving ...

Power saving system is designed based upon VESA DPMS standard (Version : 1.0)

1) Power consumption and recovery time.

*1 APM State	SIGNALS			MONITOR POWER CONSUMP-TION	RECOVERY TIME TO ON STATE	INDICATOR
	H. Sync	V. Sync	VIDEO			
ON	*3 NOR-MAL	*3 NOR-MAL	*2 ACTIVE	*4 100%	——	Green
STAND-BY	No Sync or *5 < 10 Hz	> 40 Hz	BLANK	< 15 W	< 4 sec.	Yellow
SUS-PEND	>10 kHz	No Sync or *5 < 10 Hz	BLANK	< 15 W	< 4 sec.	Yellow
OFF	No Sync or *5 < 10 Hz	No Sync or *5 < 10 Hz	BLANK	< 4 W	< 20sec	Yellow

** The transition time from ON state to each APM states is 5 seconds minimum.

*1 : APM : Advanced Power Management.

*2 : Measyrement Condition of power consumption for ON state :
DISPLAY IMAGE : WHITE full "H" characters (7 × 9 dots).

*3 : NORMAL : See "5.4 ACCEPTABLE TIMING".

*4 : Power Consumption is measured at AC 100-240V. (Note:3w Typ. at AC 230V/50Hz)

*5 : Power saving operation is done at least less than specified value in the list.

5.3 Standard timing (Standard mode)

- Following 1 mode is preset in the memory as standard timing at the factory and 7 modes are reserved.
- Fig-1 shows a definition of timing and signal level.
- Electrical performance is specified This SPECIFICATION is specified at STD (1600 x 1200) mode unless otherwise mentioned.

TIMING CHART

A	Period
B	Blanking
C	Sync Width
D	Back Porch
E	Active
F	Front Potch

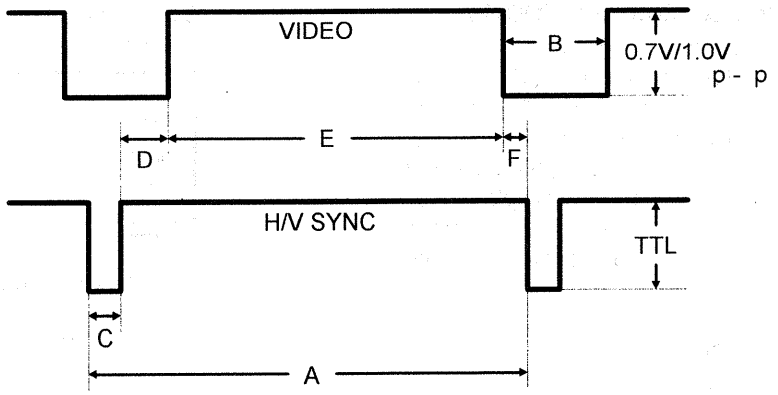


Fig.1

		PRESET	RESERVATION	RESERVATION
		MODE - 1	MODE - 2	MODE - 3
		1600 × 1200 (75)	640 × 480 (60)	640 × 480 (75)
	DOT CLOCK	202.5000 MHz	25.1750 MHz	31.5000 MHz
H	f H	93.7500 kHz	31.4688 kHz	37.5000 kHz
H	A - PERIOD	10.667 µs (2,160 dots)	31.778 µs (800 dots)	26.667 µs (840 dots)
H	B - BLANKING TIME	2.765 µs (560 dots)	6.356 µs (160 dots)	6.349 µs (200 dots)
H	C - SYNC WIDTH	0.948 µs (192 dots)	3.813 µs (96 dots)	2.032 µs (64 dots)
H	D - BACK PORCH	1.501 µs (304 dots)	1.946 µs (49 dots)	3.810 µs (120 dots)
H	E - ACTIVE TIME	7.901 µs (1,600 dots)	25.422 µs (640 dots)	20.317 µs (640 dots)
H	F - FRONT PORCH	0.316 µs (64 dots)	0.596 µs (15 dots)	0.508 µs (16 dots)
V	f V	75.0000 Hz	59.9405 Hz	75.0000 Hz
V	A - PERIOD	13.333 ms (1,250 lines)	16.683 ms (525 lines)	13.333 ms (500 lines)
V	B - BLANKING TIME	0.533 ms (50 lines)	1.430 ms (45 lines)	0.533 ms (20 lines)
V	C - SYNC WIDTH	0.032 ms (3 lines)	0.064 ms (2 lines)	0.080 ms (3 lines)
V	D - BACK PORCH	0.491 ms (46 lines)	1.176 ms (37 lines)	0.427 ms (16 lines)
V	E - ACTIVE TIME	12.800 ms (1,200 lines)	15.253 ms (480 lines)	12.800 ms (480 lines)
V	F - FRONT PORCH	0.011 ms (1 lines)	0.191 ms (6 lines)	0.027 ms (1 lines)
	SYNC POLARITY(H/V)	Positive / Positive	Negative / Negative	Negative / Negative

		RESERVATION	RESERVATION	RESERVATION
		MODE - 4	MODE - 5	MODE - 6
		800 × 600 (75)	1024 × 768 (75)	1024 × 768 (75)
	DOT CLOCK	49.5000 MHz	78.7500 MHz	78.7500 MHz
H	f H	46.8750 kHz	60.0229 kHz	59.2997 kHz
H	A - PERIOD	21.333 µs (1,056 dots)	16.660 µs (1,312 dots)	16.863 µs (1,328 dots)
H	B - BLANKING TIME	5.172 µs (256 dots)	3.657 µs (288 dots)	3.860 µs (304 dots)
H	C - SYNC WIDTH	1.616 µs (80 dots)	1.219 µs (96 dots)	1.219 µs (96 dots)
H	D - BACK PORCH	3.232 µs (160 dots)	2.235 µs (176 dots)	2.235 µs (176 dots)
H	E - ACTIVE TIME	16.162 µs (800 dots)	13.003 µs (1,024 dots)	13.003 µs (1,024 dots)
H	F - FRONT PORCH	0.323 µs (16 dots)	0.203 µs (16 dots)	0.406 µs (32 dots)
V	f V	75.0000 Hz	75.0286 Hz	73.7558 Hz
V	A - PERIOD	13.333 ms (625 lines)	13.328 ms (800 lines)	13.558 ms (804 lines)
V	B - BLANKING TIME	0.533 ms (25 lines)	0.533 ms (32 lines)	0.607 ms (36 lines)
V	C - SYNC WIDTH	0.064 ms (3 lines)	0.050 ms (3 lines)	0.051 ms (3 lines)
V	D - BACK PORCH	0.448 ms (21 lines)	0.466 ms (28 lines)	0.506 ms (30 lines)
V	E - ACTIVE TIME	12.800 ms (600 lines)	12.795 ms (768 lines)	12.951 ms (768 lines)
V	F - FRONT PORCH	0.021 ms (1 lines)	0.017 ms (1 lines)	0.051 ms (3 lines)
	SYNC POLARITY(H/V)	Positive / Positive	Positive / Positive	Negative / Negative

		RESERVATION	RESERVATION
		MODE - 7	MODE - 8
		MAC 1152 × 870 (75)	1280 × 1024 (75)
	DOT CLOCK	100.0000 MHz	135.0000 MHz
H	f H	68.6813 kHz	79.9763 kHz
H	A - PERIOD	14.560 µs (1,456 dots)	12.504 µs (1,688 dots)
H	B - BLANKING TIME	3.040 µs (304 dots)	3.022 µs (408 dots)
H	C - SYNC WIDTH	1.280 µs (128 dots)	1.067 µs (144 dots)
H	D - BACK PORCH	1.440 µs (144 dots)	1.837 µs (248 dots)
H	E - ACTIVE TIME	11.520 µs (1,152 dots)	9.481 µs (1,280 dots)
H	F - FRONT PORCH	0.320 µs (32 dots)	0.119 µs (16 dots)
V	f V	75.0616 Hz	75.0247 Hz
V	A - PERIOD	13.322 ms (915 lines)	13.329 ms (1,066 lines)
V	B - BLANKING TIME	0.655 ms (45 lines)	0.525 ms (42 lines)
V	C - SYNC WIDTH	0.044 ms (3 lines)	0.038 ms (3 lines)
V	D - BACK PORCH	0.568 ms (39 lines)	0.475 ms (38 lines)
V	E - ACTIVE TIME	12.667 ms (870 lines)	12.804 ms (1,024 lines)
V	F - FRONT PORCH	0.044 ms (3 lines)	0.013 ms (1 lines)
	SYNC POLARITY(H/V)	Negative / Negative	Positive / Positive

		ADJUSTMENT	ADJUSTMENT	ADJUSTMENT
		HV10S - 1	HV10S - 2	HV10S - 3
	DOT CLOCK	22.5900 MHz	91.6240 MHz	160.6320 MHz
H	f H	29.1108 KHz	52.1777 KHz	75.2022 KHz
H	A - PERIOD	34.351 µs (776 dots)	19.165 µs (1,756 dots)	13.297 µs (2,136 dots)
H	B - BLANKING TIME	6.906 µs (156 dots)	4.235 µs (388 dots)	3.187 µs (512 dots)
H	C - SYNC WIDTH	3.320 µs (75 dots)	1.746 µs (160 dots)	1.145 µs (184 dots)
H	D - BACK PORCH	2.258 µs (51 dots)	1.768 µs (162 dots)	1.544 µs (248 dots)
H	E - ACTIVE TIME	27.446 µs (620 dots)	14.931 µs (1,368 dots)	10.110 µs (1,624 dots)
H	F - FRONT PORCH	1.328 µs (30 dots)	0.720 µs (66 dots)	0.498 µs (80 dots)
V	f V	47.4891 Hz	92.3499 Hz	137.2304 Hz
V	A - PERIOD	21.057 ms (613 lines)	10.828 ms (565 lines)	7.287 ms (548 lines)
V	B - BLANKING TIME	0.927 ms (27 lines)	0.556 ms (29 lines)	0.426 ms (32 lines)
V	C - SYNC WIDTH	0.103 ms (3 lines)	0.057 ms (3 lines)	0.040 ms (3 lines)
V	D - BACK PORCH	0.721 ms (21 lines)	0.479 ms (25 lines)	0.372 ms (28 lines)
V	E - ACTIVE TIME	20.130 ms (586 lines)	10.273 ms (536 lines)	6.861 ms (516 lines)
V	F - FRONT PORCH	0.103 ms (3 lines)	0.019 ms (1 lines)	0.013 ms (1 lines)
	SYNC POLARITY(H/V)	Negative / Negative	Negative / Negative	Negative / Negative

		ADJUSTMENT
		HV10S - 4
	DOT CLOCK	230.1100 MHz
H	f H	96.5227 KHz
H	A - PERIOD	10.360 µs (2,384 dots)
H	B - BLANKING TIME	2.694 µs (620 dots)
H	C - SYNC WIDTH	0.834 µs (192 dots)
H	D - BACK PORCH	1.495 µs (344 dots)
H	E - ACTIVE TIME	7.666 µs (1,764 dots)
H	F - FRONT PORCH	0.365 µs (84 dots)
V	f V	182.1182 Hz
V	A - PERIOD	5.491 ms (530 lines)
V	B - BLANKING TIME	0.363 ms (35 lines)
V	C - SYNC WIDTH	0.031 ms (3 lines)
V	D - BACK PORCH	0.321 ms (31 lines)
V	E - ACTIVE TIME	5.128 ms (495 lines)
V	F - FRONT PORCH	0.010 ms (1 lines)
	SYNC POLARITY(H/V)	Negative / Negative

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5.4 Acceptable timing

- If your timing is within following specification, this CRT display can automatically function with a certain size and position.

Horizontal: Sync frequency: 30.0 ~ 95.0 kHz
Blanking Time: ≥ 2.7 μs
Back Porch: ≥ 1.25 μs
Front Porch: ≤ Back Porch
Sync Width : 0.948 ~ 4.0μs($f_{H<50KHz}$)
0.948 ~ 2.5μs($f_{H>50KHz}$)

Vertical: Sync frequency: 50.0 ~ 180.0 Hz
Blanking Time: ≥ 0.5 ms
Back Porch: ≥ 0.4 ms
Sync Width: ≥ 0.032 ms

- Several items like size, position and distortion can be adjusted through OSD menu, and if you want to keep it, please push the key [1] for memory, or keep the key untouched for about 20 seconds, it is automatically memorized.

NOTE : In case of RECALL, the key is untouched for about 30 seconds, RECALL function will be cancelled.

Please note, however, that there is the case you can not get the size and/or position you want,
(for example, in case Display video Time is too short, you can't get bigger size of the image.)

- The CRT adopted in this CRT display is designed to minimize the moire phenomenon at suitable size for typical display modes. However, there might be a display format among many formats, in which the moire phenomenon appears on this display.

5.5 Signal level and input impedance

5.5.1 Video Signal level

- This CRT display is adjusted at the factory using 0.7Vpp Video Signal. Black level is 0 V.
- This CRT display is compatible with 1.0Vpp Video signal by using Video input level selection.

5.5.2 Sync Signal level

- H/V Separate, H/V Mixed : TTL level
- Sync on Green : 0.3 V p-p ±0.015V

5.5.3 Input impedance

- Video input: 75 Ω
- Sync input: ≥ 1 kΩ

5.6 Display performance

5.6.1 Display area

1) PRESET TIMING
MODE 1,1600×1200 @75Hz
WIDTH : 392 mm ± 5 mm
HEIGHT : 294 mm ± 5 mm

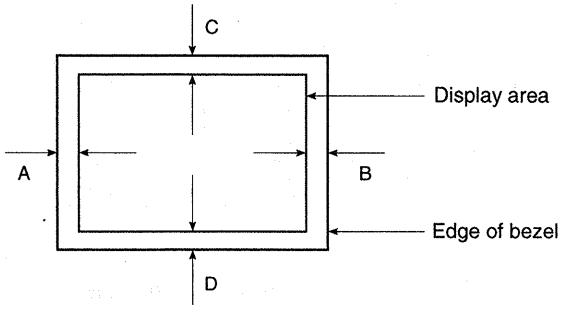
2) RESERVATION TIMING
MODE 2, 640× 480 @60Hz
WIDTH : 392 mm ± 7 mm
HEIGHT : 294 mm ± 7 mm
MODE 3, 640× 480 @60Hz
WIDTH : 392 mm ± 7 mm
HEIGHT : 294 mm ± 7 mm
MODE 4, 800× 600 @75Hz
WIDTH : 392 mm ± 7 mm
HEIGHT : 294 mm ± 7 mm
MODE 5,1024× 768 @75Hz
WIDTH : 392 mm ± 7 mm
HEIGHT : 294 mm ± 7 mm
MODE 6,1024× 768 @75Hz
WIDTH : 392 mm ± 7 mm
HEIGHT : 294 mm ± 7 mm
MODE 7,1152× 870 @75Hz
WIDTH : 392 mm ± 7 mm
HEIGHT : 294 mm ± 7 mm
MODE 8,1280×1024 @75Hz
WIDTH : 368 mm ± 7 mm
HEIGHT : 294 mm ± 7 mm

3) FULL SCAN
WIDTH : 406 mm
HEIGHT : 304 mm

5.6.2 Centering

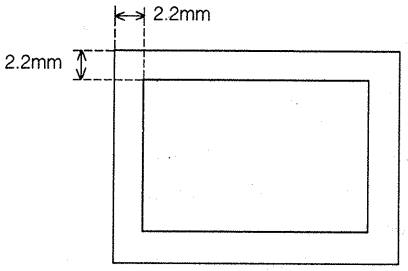
1) PRESET TIMING (MODE1)
|A – B| ≤ 4 mm
|C – D| ≤ 4 mm

2) RESERVATION TIMING (MODE2~8)
|A – B| ≤ 7 mm
|C – D| ≤ 7 mm



5.6.3 Distortion

Inside 2.2 mm Freme

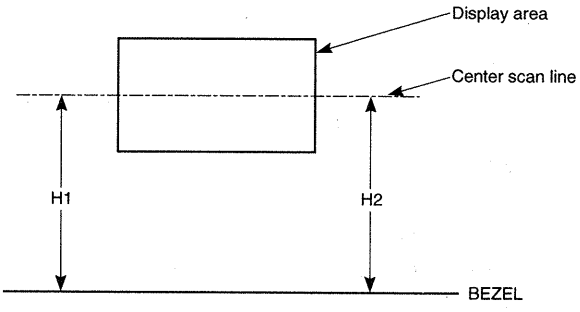


5.6.4 Rotation

$|H1 - H2| \leq 2.5$ mm

$|H1 - H2| = 0$ mm

(after adjustment)



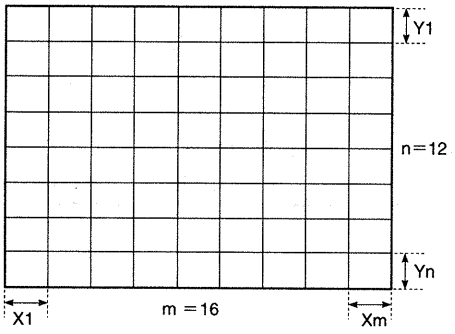
5.6.5 Linearity

Horizontal linearity

$$= \frac{X\,max. - X\,min.}{X\,max. + X\,min.} \times 100\% \leq 7\%$$

Vertical linearity

$$= \frac{Y\,max. - Y\,min.}{Y\,max. + Y\,min.} \times 100\% \leq 6\%$$



<Conditions>

Display image ------- crosshatch pattern

Maximum and minimum values should not be adjacent to each other.

X max. is maximum value among X1~Xm

X min. is minimum value among X1~Xm

Y max. is maximum value among Y1~Yn

Y min. is minimum value among Y1~Yn

5.7 General performance

5.7.1 Maximum Pixel Clock

158MHz (Typ.)

5.7.2 Maximum luminance

Value	95 cd/m² (Typ.) for 5% white field at the center of the display area. 85 cd/m² (Typ.) for 100% white field at the center of the display area. Specified by 9300 K + 8 MPCD
Conditions	Display image : White full flat field Luminance : Max. (Contrast : Max.) (Brightness :CENTER point)

5.7.3 Minimum luminance

Value	≤ 17 cd/m² at the center of the display area. Specified by 9300 K + 8 MPCD
Conditions	Display image : White full flat field Luminance : Min. (Contrast : Min.) (Brightness : CENTER point)

5.7.4 Brightness variation

Value	75 % (Min.) Variation = C/A X 100
Conditions	Display image : White full flat field Luminance : MAX (Contrast : MAX) (Brightness : Center point) A ; Luminance at center position C ; Luminance at position of lowest brightness

5.7.5 Display area regulation

	Display area variation	Range of variation
Due to Luminance	within 1.0 %	17~95 cd/m² (white flat field)
Due to Power Supply	within 0.5 %	AC : 90 - 132 V or 198 - 264 V
Due to Temperature	within 1.5 %	20° C ± 20° C

5.7.6 Color Point

< Conditions >

Display image : White flat field at the center of the display area.

Luminance : Brightness Center point.

Contrast	max	min
Value	9300 K + 8 MPCD x = 0.283 ± 0.020 y = 0.298 ± 0.020	9300 K + 8 MPCD x = 0.283 ± 0.020 y = 0.298 ± 0.020

< Conditions >

Display image : 5% White flat field at the center of the display area.

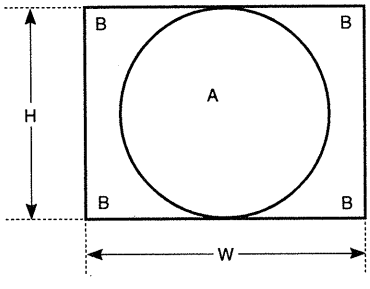
Luminance : Brightness Center point , Contrast max

Contrast	7500K	6500K	5000K
Value	x = 0.300(Typ.) y = 0.315(Typ.)	x = 0.313(Typ.) y = 0.329(Typ.)	x = 0.346(Typ.) y = 0.359(Typ.)

5.7.7 Misconvergence

Center area of display (A) : 0.3 mm (Max.)

Corner area of display (B) : 0.4 mm (Max.)



<Conditions>

Display image : Crosshatch pattern mixed with R, G and B colors.

Convergence gauge : KLEIN CM7AG or equivalent.

Display area : W x H 392 x 294 mm

5.7.8 White Uniformity

xa – xc ≤ ± 0.015

xa : x coordinate at the CRT center

xc : x coordinate at any other point

ya – yc ≤ ± 0.015

ya : y coordinate at the CRT center

ya : y coordinate at any other point

<Conditions>

Display image : White flat field

Luminance : 95 cd/m² at the center of display area

Display area : 392 x 294 mm

5.7.9 Purity

Conspicuous mislanding shall not be visible within display area at a distance of 60cm from CRT surface.

<Conditions>

Display image : Red/Green/Blue flat field

Luminance : Contrast max, Brightness CENTER

Display area : 392 x 294 mm

5.7.10 Jitters

Invisible at a distance of 60 cm from CRT surface.

6. ENVIRONMENTS

6.1 Ambient temperature, humidity and altitude

	Operating	Storage and shipment
Temperature	0 ~ 40° C (32 ~ 104° F)	–20 ~ +60° C (–4 ~ 140° F)
Humidity	5 ~ 90 % *	5 ~ 90 % * .
Altitude	3,000 m (Max.) (10,000 ft)	12,000 m (Max.) (40,000 ft)

* Non-condensation

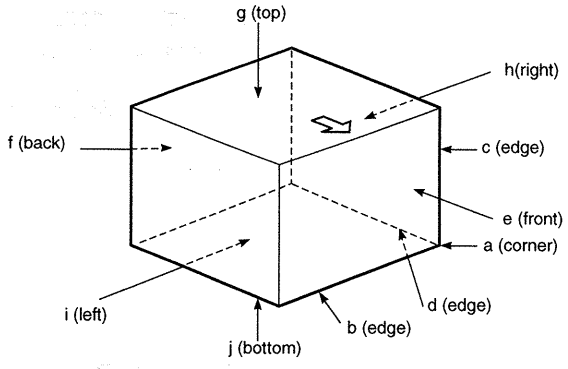
6.2 Vibration and shock

6.2.1 Vibration

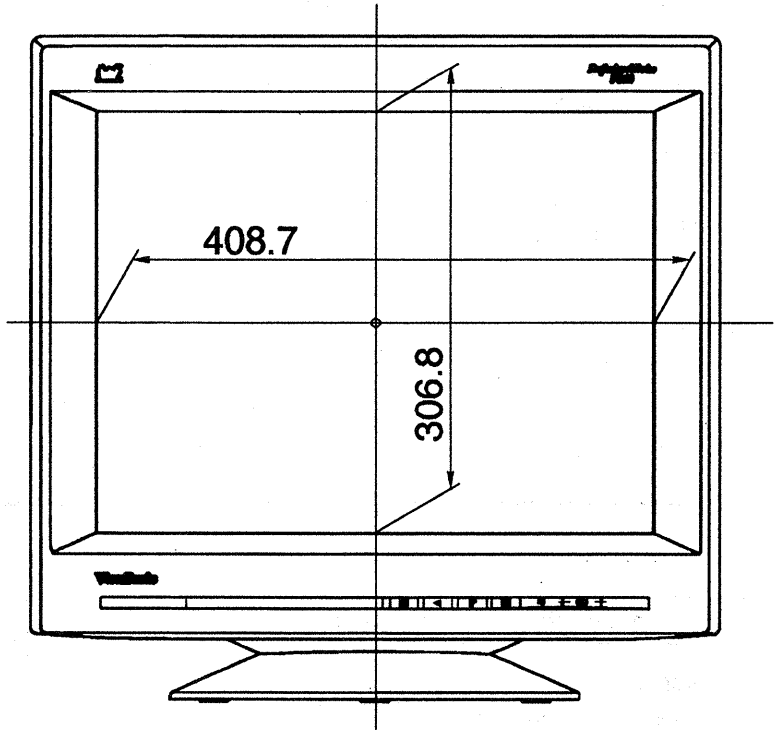
	Order of tests	Direction of vibration		Acceleration		Frequency	Sweep	Test time
				Non-operation	Storage and shipment			
Unpacked	1	Vertical	Up to down	2.9 m/s² (0.3 G)		5 - 55 Hz	120 s	30 min.
	2	Horizontal	Front to back					15 min.
	3		Right to left					
Packed	1	Vertical	Up to down		10m/s² (1.0 G)	5 - 50 Hz	810s (Logsweep)	40 min.
	2	Horizontal	Front to back		5m/s² (0.5 G)			20 min.
	3		Right to left					

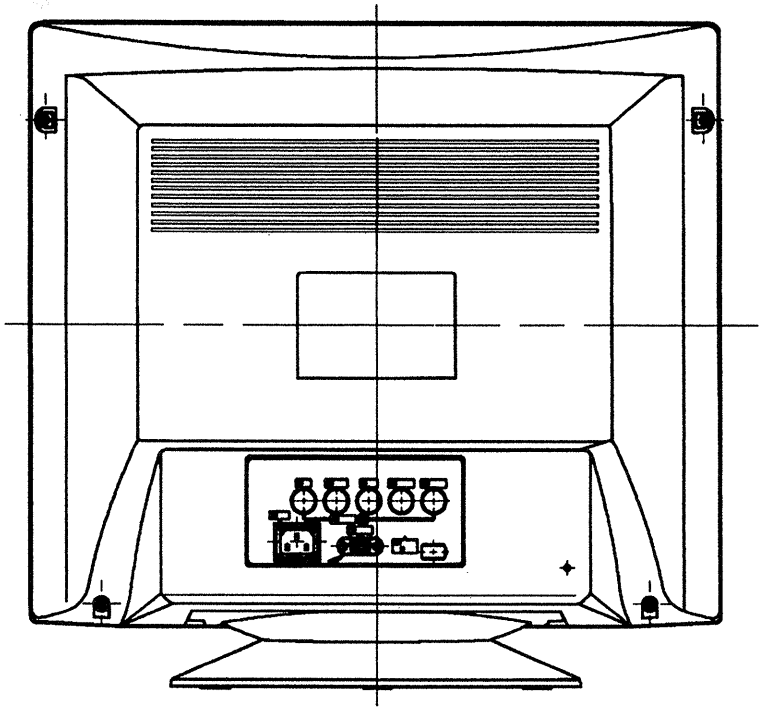
6.2.2 Shock (Drop test)

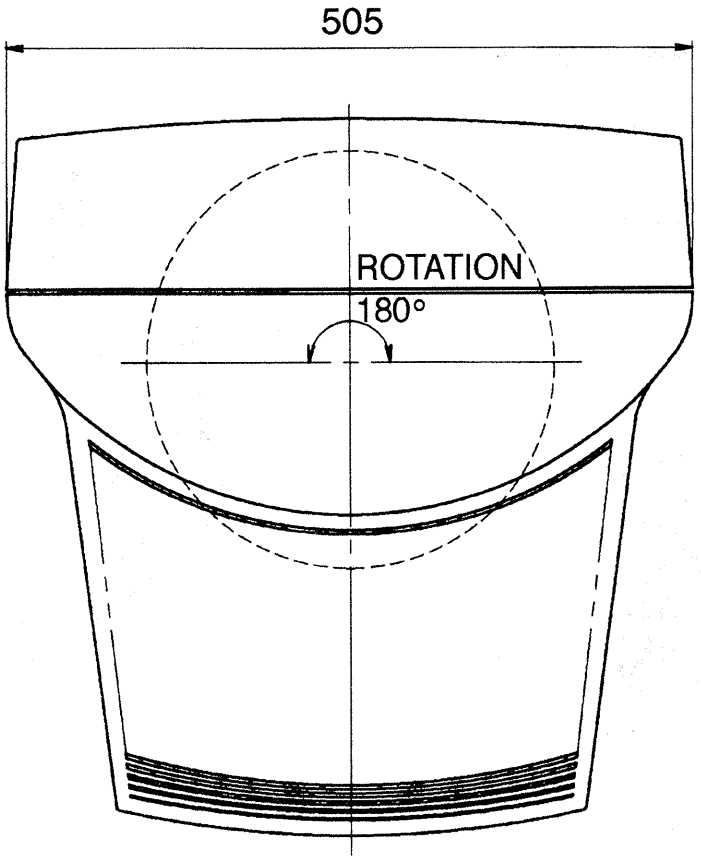
Unpacked	20 G One time for each face (6 faces) (non-operation)			
Packed	Order of drop	Face to drop is to face the floor. (See the figure)	Height	Number of drop
	1	A, B, C, D, E, F, G, H, I	31 cm	1 time for each
	2	J	50 cm	

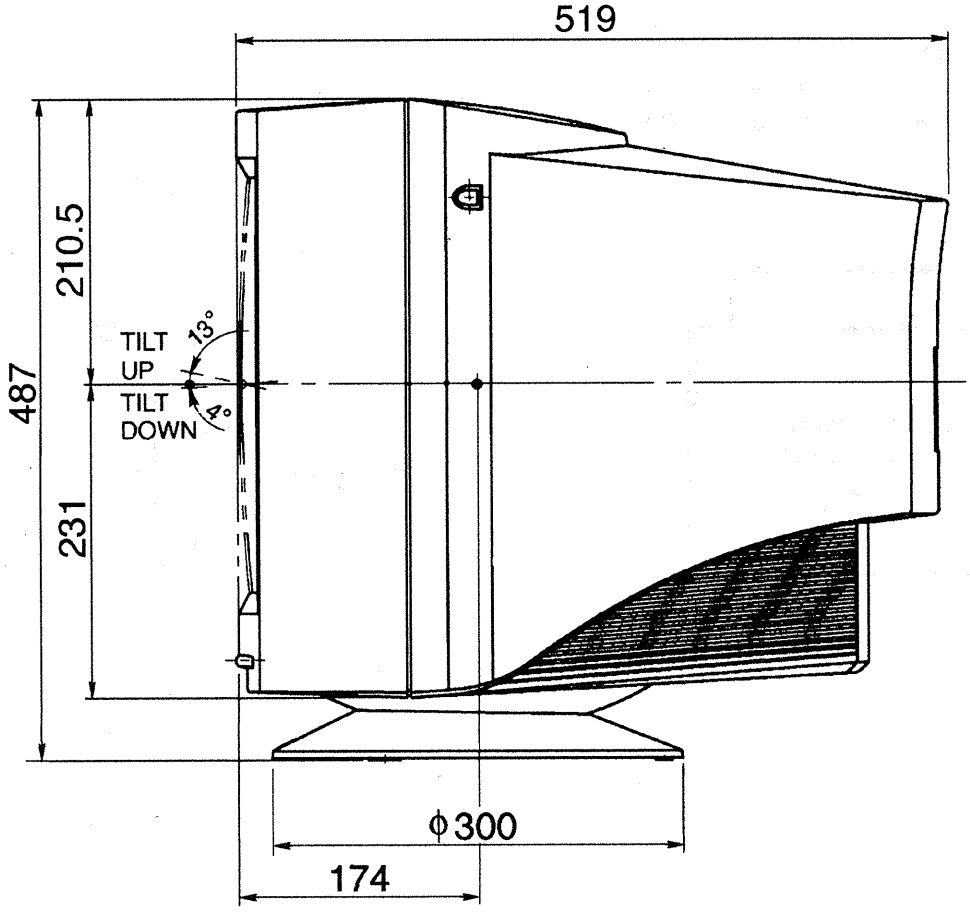


DIMENSIONS






505
ROTATION
180°

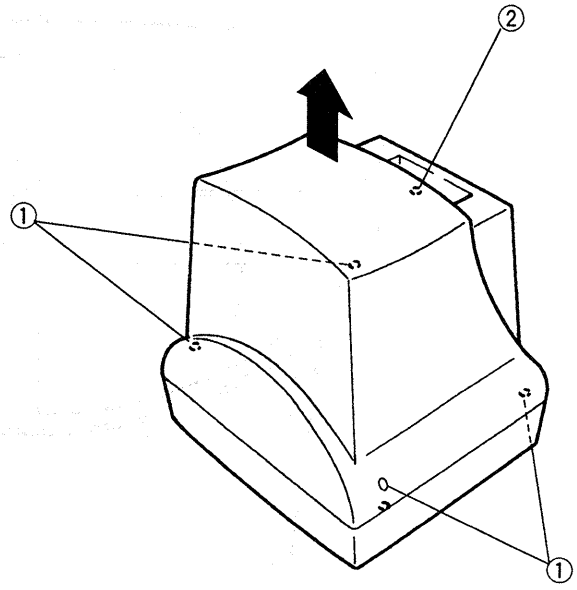

519
210.5
487
231
TILT
UP
13°
TILT
DOWN
4°
ϕ300
174

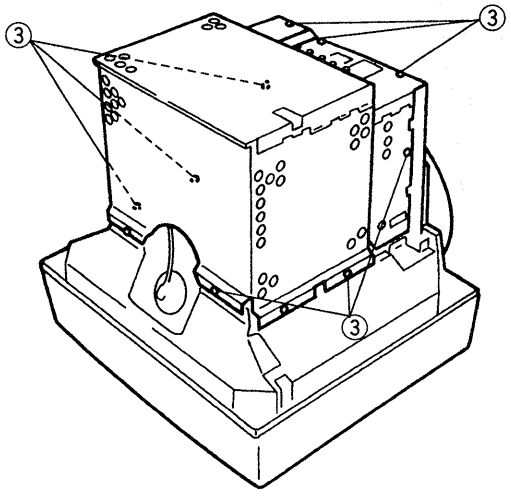
DISASSEMBLY INSTRUCTIONS

1. Rear cover removal

Note: Spread a mat underneath to avoid damaging the CRT surface.

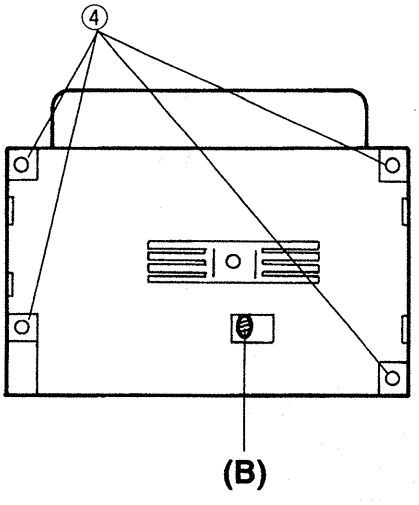
1) Remove four large screws ① and small screw ② from the rear cover.
2) Remove the cover.
3) Remove nine screws ③ from the shield case.
4) Remove the shield case.

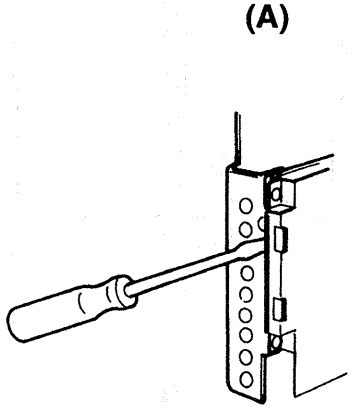




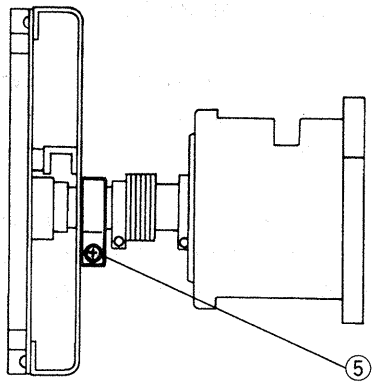
2. Video PCB removal

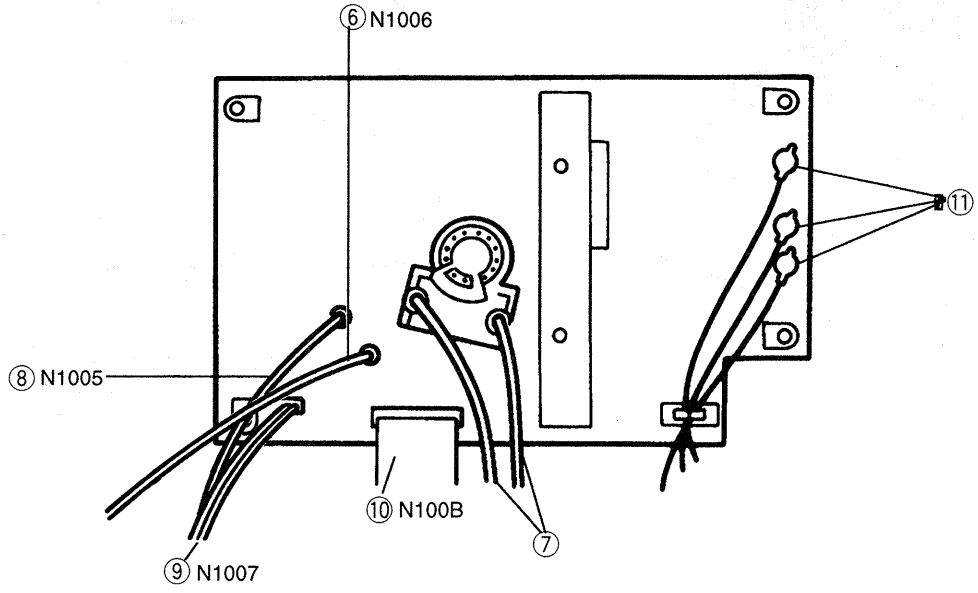
1) Remove four screws ④ securing the shield cover.
2) Desolder (B) and Remove the shield cover (A).

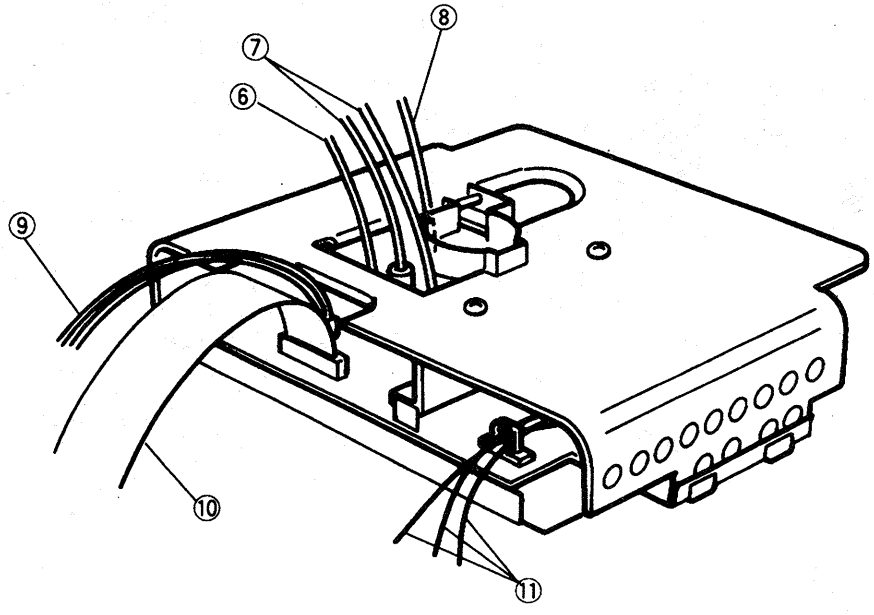




3) Loosen the screw ⑤ securing the CRT neck and the shield case.
4) Remove the PCB block from the CRT.
5) Remove the N1006 connector ⑥.
6) Remove two focus leads ⑦.
7) Remove ground connector ⑧ (N1005) connected to the PCB.
8) Remove N1007 connector ⑨.
9) Remove N100B connector ⑩.
10) Remove RGB connector ⑪.
11) Remove the PCB from the shield case.

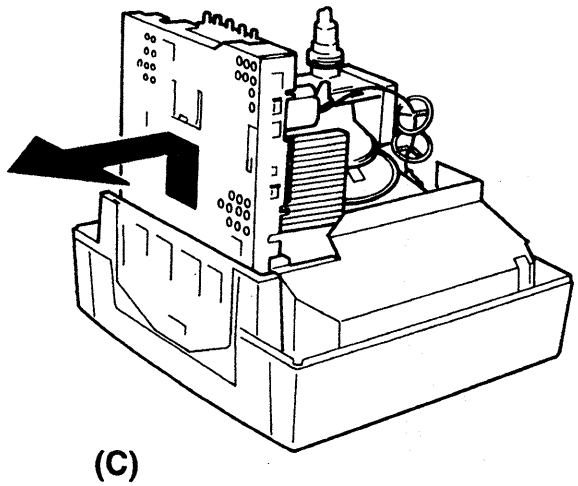




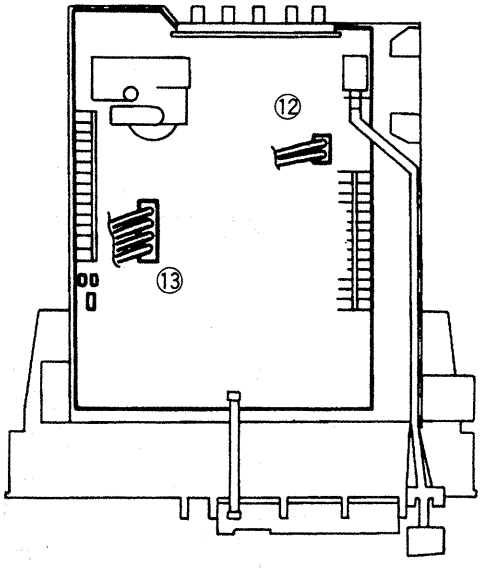


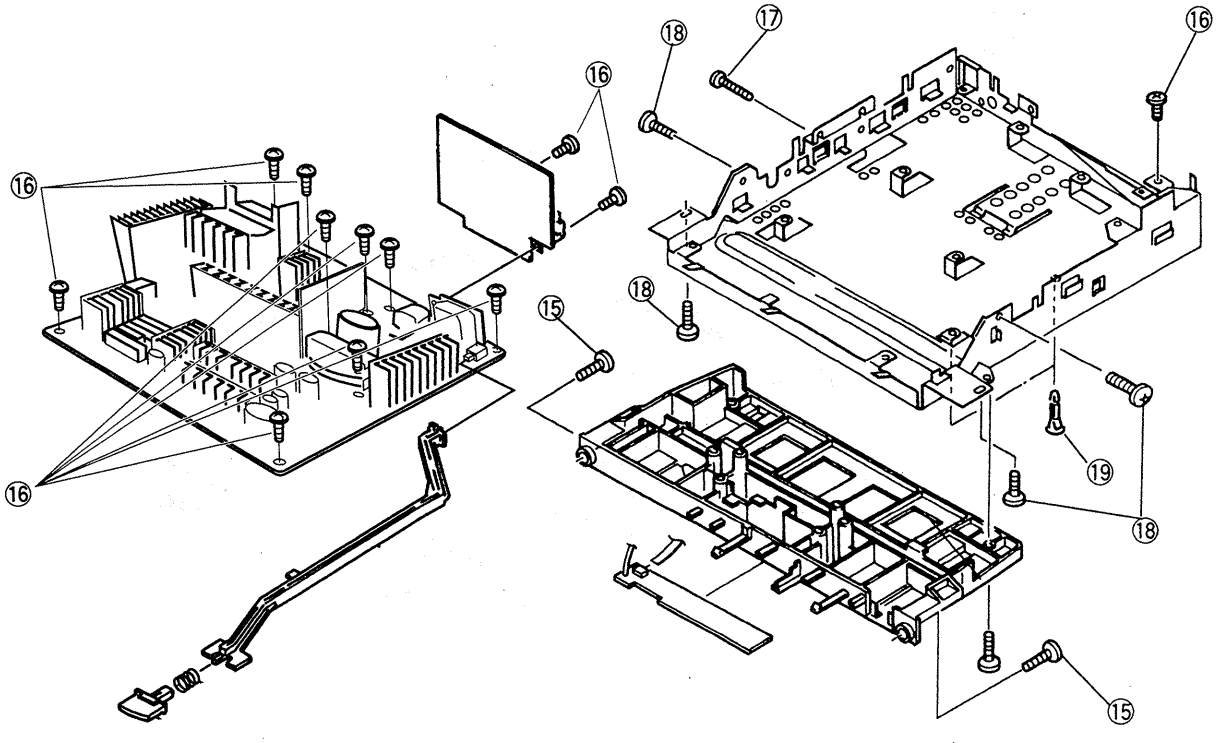
3. Main PCB Removal

1) Remove the connector ⑫ (N901) of the degauss coil.
2) Remove the DY connector ⑬.
3) Remove the anode cap.
4) Move the CRT face down and remove two screws ⑮ securing the bottom fitting metal.
5) Remove the fitting metal and the PCB from the cabinet. (C)
6) Remove thirteen screws ⑯ securing the fitting metal and PCB.
7) Remove screws ⑰ securing the fitting metal and PCB.
8) Remove four screwsthe ⑱ securing the fitting metal and PCB.
9) Remove two clamper ⑲ the fitting metal and PCB.
10) Remove the PCB with the figure referenced.



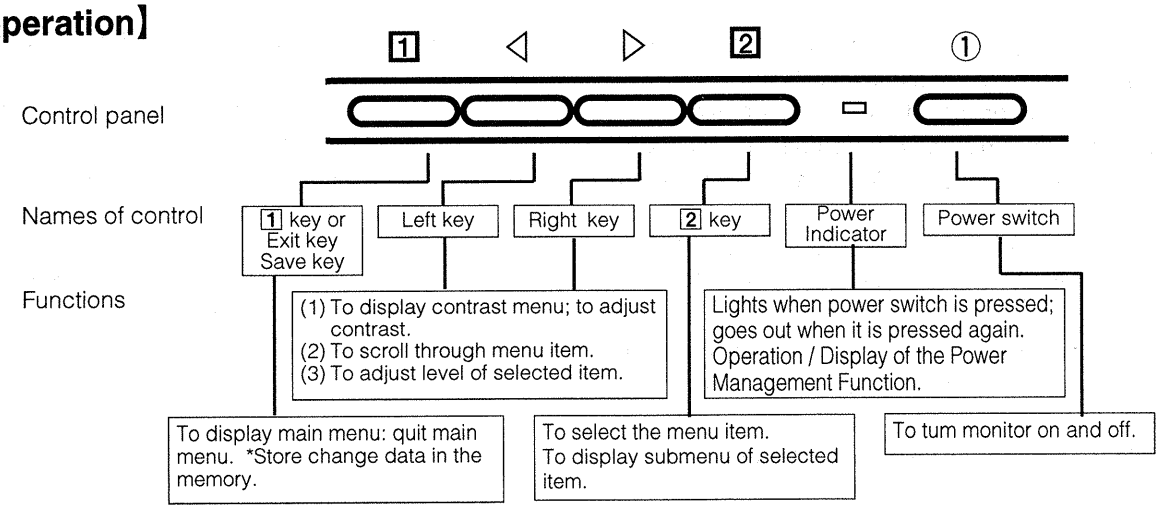
(C)





CONTROL LOCATION

[Basic operation]


1
2
Control panel
Names of control
Functions
1 key or Exit key Save key
Left key
Right key
2 key
Power Indicator
Power switch
(1) To display contrast menu; to adjust contrast.
(2) To scroll through menu item.
(3) To adjust level of selected item.
Lights when power switch is pressed; goes out when it is pressed again. Operation / Display of the Power Management Function.
To display main menu: quit main menu. *Store change data in the memory.
To select the menu item. To display submenu of selected item.
To tum monitor on and off.

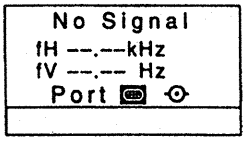
- For a detailed description of the functions of the 1 key, left key, right key, and 2 key.

*Since contrast is the most commonly adjusted parameter, we have provided direct access to this menu item.

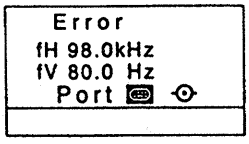
Adjustments

Self-Test menu(No Signal screen

This display indicates that the monitor is operating normally.When one of the following conditions occurs,press one of the 4 operation keys to call the appropriate display.



No signal (The computer is not connected or the mains power to the computer is disconnected)



The horizontal sync. signal are outside of the permitted range (the value of the horizontalsync. signal will be displayed in red and the value of the vertical sync. signal will be displayed in white)

	Contrast Brightness
	Size & Position
	Geometry
	Tilt
	ViewMatch Color
	ViewMatch / Degauss
	Memory Recall
	Video Level
	Moire Reduction
	OSD Language / position

CAUTION FOR ADJUSTMENT AND REPAIR

1. Degaussing is inevitably required at purity adjustment or convergence adjustment.
2. If you check or adjust electrical specification or function, more than 20 minutes burn-in is required.
3. Reforming of the lead wire is required after your repair work.
4. Prior to starting work, be sure to check that the input signal is at the specified timing and that the polarity is as specified in all modes.
5. Brightness control: After mounting the rear cover, brightness tends to decrease about 5 cd/m² on a flat white field and about 1 cm/m² on a white raster field. This should be taken into consideration.
6. Brightness stabilizing time: It takes about 20 to 50 seconds for the brightness to stabilize after turning the power off for 5 seconds (AC). Therefore, care should be taken to this.
7. Aging should be made in white raster of 30 ~ 50 cd/m² and raster size, 402 x 301 mm before adjusting the ITC.
8. Set the CONTRAST to MAX and BRIGHTNESS to CENTER using the O.S.D.

CAUTION FOR SERVICING

When servicing or replacing the CRT, high voltage sometimes remains on the anode. So, completely discharge high voltage before servicing or replacing the CRT so as to prevent a shock to the service person.

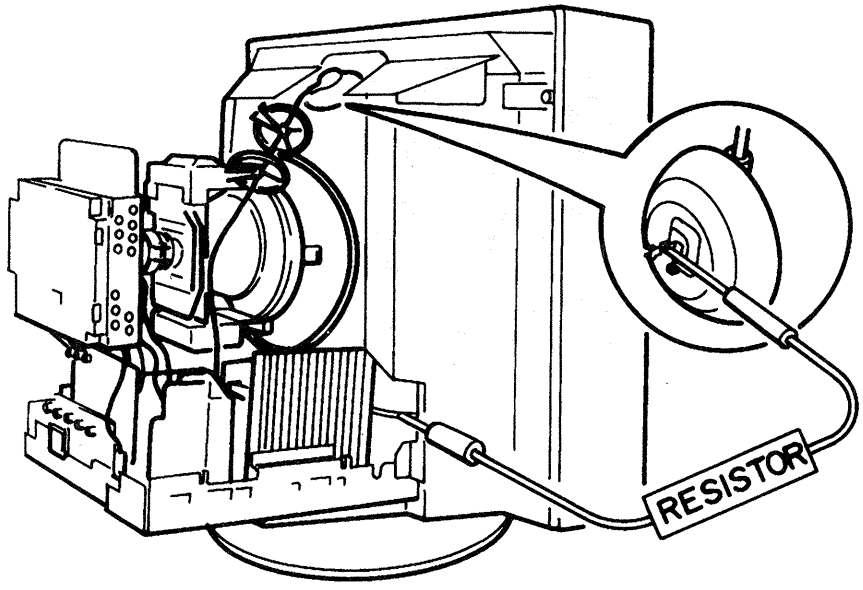
CRT Anode Discharge

1. When you check the CRT anode or replace the CRT, discharge the CRT anode to the external conductive coating (aquadag) of CRT, especially when checked right after power turn-off.
2. Ground one end of a jumper wire which has a resistor (30 kV < resisting pressure 100 MΩ) and connect the other point to the CRT anode.

Note: Grounding must be done first.

This model has a section that does not share a common ground with the power supply section. The different sections are referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may be hit by an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscilloscopes or multimeters.
4. Always unplug the unit before beginning any operation such as removing the chassis.



ADJUSTMENT AND CHECK PROCEDURE

INTRODUCTION

- This monitor is controlled by a microcomputer. With the exception of purity/convergence/focus all is digitally adjusted.
  Therefore a computer, the dedicated control software, the dedicated interface, a 9~12 V power supply, and a signal generator are required servicing.

TOOLS REQUIRED

- **Computer**
  The control software is IBM PC compatible only. Therefore, it is not compatible with any other operating systems. For further information please contact **our sales office.**

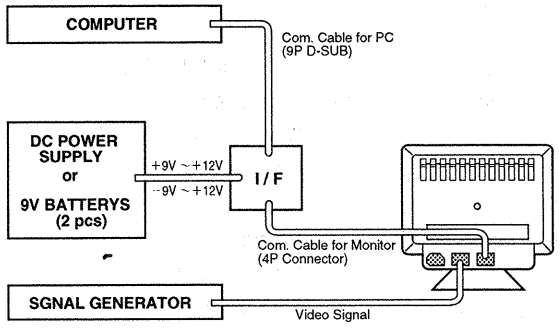
- **Control Software**
  The **P810-3** chassis can only use adjustment program disk" for this model. No other program can access the EEPROM on the monitor. For further information please contact **our sales office.**

- **Interface**
  The interface is dedicated to work only with the control software and the HV chassis. There are no substitutes for this interface. For further information please contact **our sales office.**

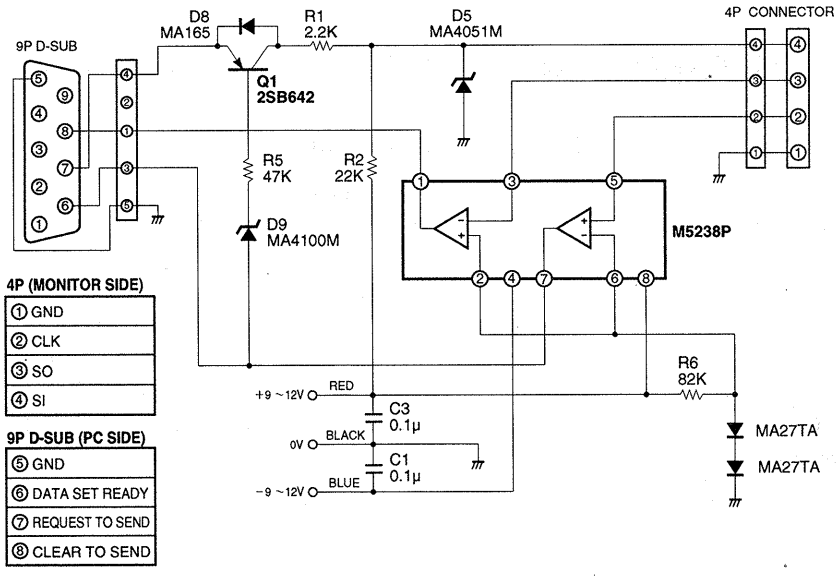
- **Power Supply**
  A DC 9~12 V (+9~12 V/–9~12 V) power supply is required for operating the interface.

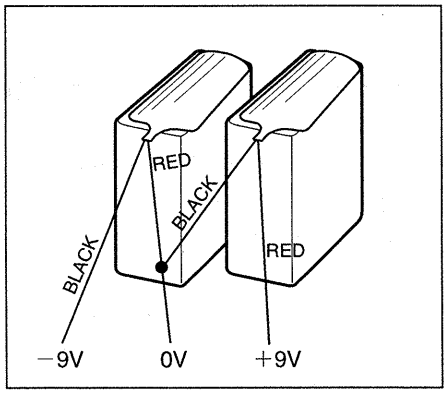
- **Signal Generator**
  It is necessary for you to use a signal generator which operates on fH 95 kHz, fv 180 Hz, and fc 158 MHz bands.

INTERFACE CONNECTION



INTERFACE SCHEMATIC DIAGRAM





BATTERY CONNECTION

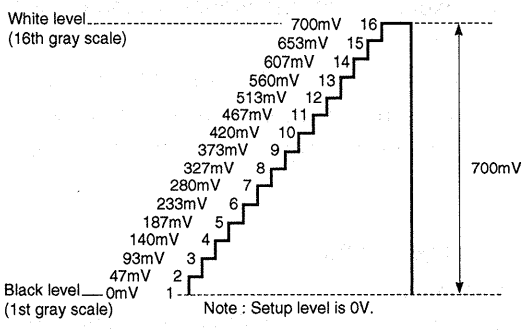
OTHER TOOLS

- Oscilloscope (dual trace)
- Scope probe – Attenuation: 100:1
  Attenuation: 10:1
- Digital Voltmeter – Range: 0 to 1000 V DC
  Accuracy: 0.1 %
- TV color Analyzer II – that reads luminance and chromaticity X and Y coordinates.
- High Voltag Probe
- AC power supply – Output voltage : 0 to 300 V
- Degaussing coil
- Convergence meter
- Scale
- Microscope – Scale factor: 50

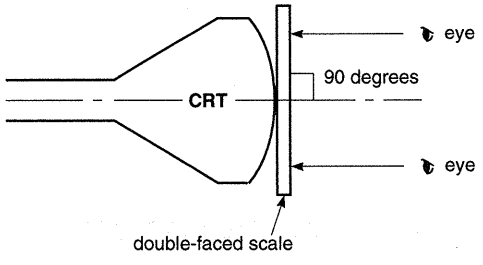
STANDARD CONDITION OF ADJUSTMENT PROCEDURE

- Signal timing : Preset timing
- Display pattern : White, full "H" character
- Signal level : V/H: TTL level video: 700 mV
- Input source : AC 100~240 V, 50/60 Hz
- Ambient temperature : Room temperature
- Warm-up time : More than 30 minutes
- Brightness control : Center
- Contrast control : Max.
- Magnetic field : Vertical: 40 μT
  Horizontal: 0 μT
- Signal cable : Attached

Video input signal from PC.



- Use a Helmholtz device to adjust an unit with no horizontal magnetic field and a vertical field of 40 μT. Inspect the unit under the same conditions.
- The ambient illuminance must be 200 lux.
- Use an external degaussing coil any time the DEGAUSS switch does not remove color shading.
- To check the image width, height, linearity and distortion, proceed as below.



ADJUSTMENT SOFTWARE

1. Software operating procedure

A) Power on the computer.

B) Connect the Communication cable for monitor adjustment.

C) Insert the adjustment disk into the drive.

D) At the A:> prompt type "VSR" , then press [ENTER].

> A function to identify the connected monitor is provided to prevent accidents due to erroneous use of **P810-3** chassis program. If this program is used for any monitor other than th **P810-3**, the message reading "This monitor is not a **P810-3** chassis. All further activity has been prevented" is displayed and the operation is stopped.

E) Refer to the adjustment procedures.

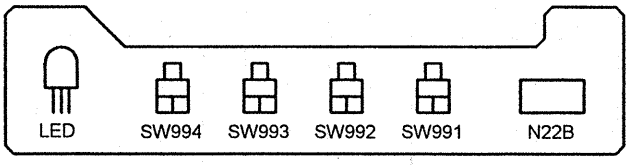
2. Adjustment Program

Main Menu of Adjustment Program

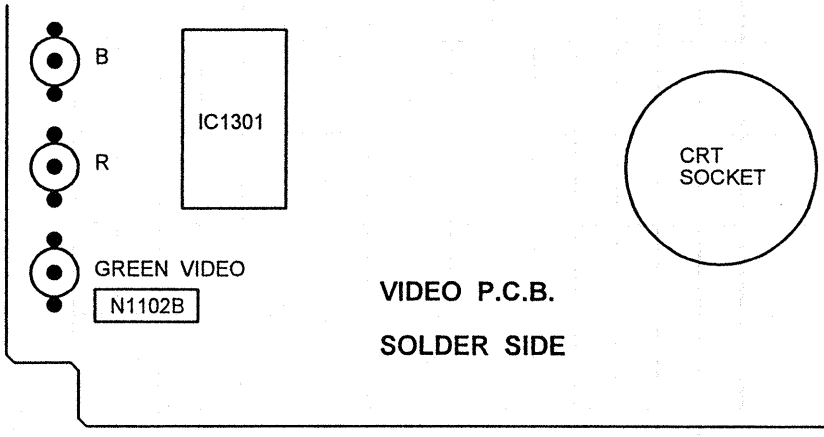
P810-3 ADJUSTMENT PROGRAM MENU>>
(e: exit, q: quit) <Ver *.*>

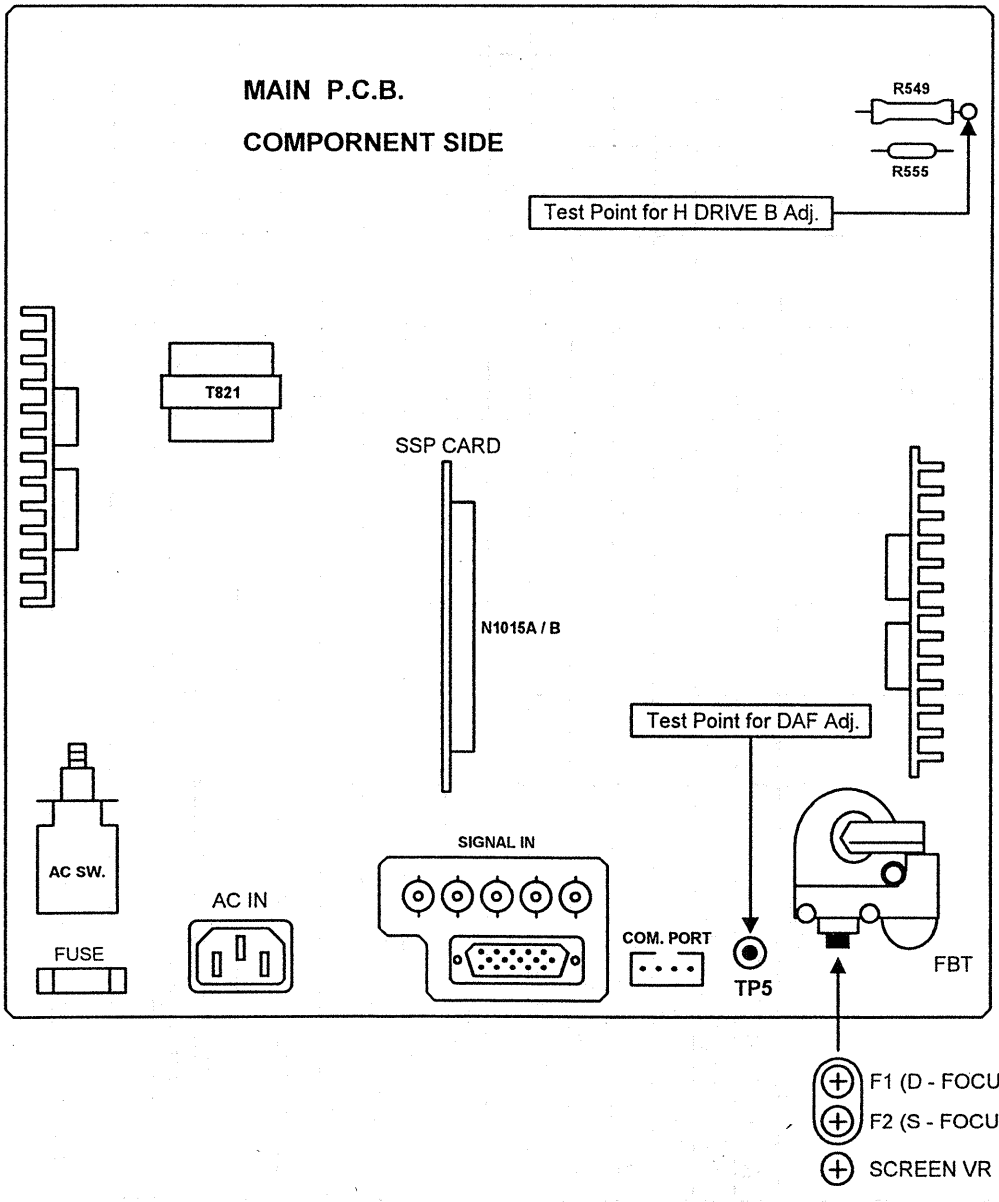
1) Load data from FILE	6) Save data to FILE
2) Adjust VSR setting	7) Special ADJUST
3) Adjust STD setting	8) Information Service
4) Adjust Factory preset	9) Show Version & Error
5) Clear User preset	10) DDC EDID Date seeting

SERVICE ADJUSTMENT CONTROL LOCATION



FRONT CONTROL UNIT





REQUIRED ADJUSTMENT PROCEDURE AFTER A PART IS REPLACED (✓ IS REQUIRED)

	ADJUSTMENT ITEM	REPLACED PARTS																
		MAIN P.C.B.	SSP CARD	VIDEO P.C.B.	CRT DY	IC1301 IC1302 IC1303 IC1305 IC1331	Q1065 Q1165 Q1265	IC490	IC580	Q550 IC850 Q881	FBT IC671 Q601							
A	DATA SETTING *	✓	✓															
B	H. DRIVE +B ADJUST	✓	✓						✓									
C	EHT ADJUST	✓	✓		✓						✓							
D	H CENTER ADJUST	✓	✓		✓					✓								
E	SUB ADJUST	✓	✓		✓			✓		✓	✓							
F	VSR SETTING	✓	✓		✓			✓		✓	✓							
G	PRESET ADJUST	✓	✓		✓			✓		✓	✓							
H	BRIGHTNESS, COLOR	✓	✓	✓	✓	✓	✓				✓							
I	DAF ADJUST	✓	✓		✓						✓							
J	FOCUS ADJUST	✓	✓		✓						✓							
K	DATA SAVING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
L	DDC DATA SETTING	✓	✓															
	PURITY & CONVERGENCE				✓													
	SCREEN CHECK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							

*** (A) DATA SETTING : Do not load standard data except when main PCB and SSP Card are replaced.**

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ADJUSTMENT PROCEDURE

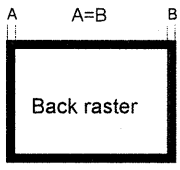
Note 1 : Check to be sure that the program disk name is **P810 - 3** before making necessary adjustment.

Note 2 : Unless otherwise specified, the monitor state is as given at right.

Note 3 : The underlined places indicate the adjustment items on the screen of the PC.

1. Description of Adjustment Method

	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
A	**STANDARD DATA SETTING** 1) Load data from FILE		A1 A2 A3 AE		Turn on the power switch of the monitor. Set the cell to the menu at left and press [↵]. A massage **FILE -> EEPROM FILE NAME (q or Q escape) [ ] :** is displayed. So key in the DACDATA.DAT (when using the standard data) and press [↵]. Turn off the power switch of the monitor, then turn on again.	
	Do not load standard data except when Main P.C.B. and SSP Card are replaced.					
B	**H. DRIVE +B** 2) Adjust VSR setting	◇ Digital Voltmeter ▼ R549 ~ GND Refer to Service Adjustment Control Location for this connect point. ☐ Crosshatch	B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 BE	**(P810-3)-1** **(P810-3)-2** **(P810-3)-3** **(P810-3)-4** 	Set the cell to the menu at left and press [↵]. Set the cell to the adjusting mode INTP [0] and press [↵]. Check that the input signal to the monitor is [fH 29.1KHz] and [fV 47.5Hz] and press [↵]. Set the cell to H. DRIVE +B and press [↵]. Make the adjustment to the value shown at right by using [←] and [→]. Register by press [↵] and return to menu of **B2** by press [**E**]. Input signal [fH 52.2kHz] and [fV 92.3Hz] Select Adjusting mode INTP [1], and repeat above (**B4 B5 B6**) procedure. Input signal [fH 75.2kHz] and [fV 137.2Hz] Select Adjusting mode INTP [2], and repeat above (**B4 B5 B6**) procedure. Input signal [fH 96.5kHz] and [fV 182.1Hz] Select Adjusting mode INTP [3], and repeat above (**B4 B5 B6**) procedure. Press [**E**] to return to main menu.	25.3V ±0.5V 23.4V ±0.5V 21.4V ±0.5V 19.2V ±0.5V

	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
C	**EHT ADJUST** 3) Adjust OTHER setting Adjust NON-VSR Setting	◇ Digital Voltmeter ◇ High Voltage Probe ▼ Anode Cap ~ GND ☐ RGB off (Sync only)	C1 C2 C3 C4 C5 C6 C7 C8 CE	 **(P810-3)-4** 	Turn the power switch of the monitor OFF. Connect high voltage probe to Anode Cap and GND. Turn the power switch of the monitor ON. Set the cell to the menu at left and press [↵]. Set the cell to Adjust NON-VSR Setting and press [↵]. Check that the input signal to the monitor is [fH 96.5kHz] and [fV 182.1Hz] and press [↵]. Move the cell to EHT and press [↵]. Make adjustment to the value shown at right by using [←] and [→]. Register by pressing [↵] and return to menu of **C5**, then return to the main menu by pressing [**E**].	 27kV ±0.3kV
D	**H. CENTER** 2) Adjust VSR setting	☐ RGB off (Sync only)	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 DE	 **(P810-3)-1** **(P810-3)-2** **(P810-3)-3** **(P810-3)-4** 	Set the Brightness to MAX by using OSD. Set the cell to the menu at left and press [↵]. Set the cell to the adjusting mode INTP [0] and press [↵]. Check that the input signal to the monitor is [fH 29.1kHz] and [fV 47.5Hz] and press [↵]. Set the cell to H CENTER and press [↵]. Make the adjustment to the value shown at right by using [←] and [→]. Press [↵] to register, and return to menu of **D3**. Input signal [fH 52.2kHz] and [fV 92.3Hz] Select Adjusting mode INTP [1], and repeat above (**D5 D6 D7**) procedure. Input signal [fH 75.2kHz] and [fV 137.2Hz] Select Adjusting mode INTP [2], and repeat above (**D5 D6 D7**) procedure. Input signal [fH 96.5kHz] and [fV 182.1Hz] Select Adjusting mode INTP [3], and repeat above (**D5 D6 D7**) procedure. Return to the main menu by pressing [**E**].	 Set the raster to the center with respect to the bezel.

	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
E	**SUB ADJUST** 3) Adjust OTHER setting Adjust NON-VSR Setting	☐ Crosshatch	E1 E2 E3 E4	 Mode-1	Set the cell to the menu at left and press [↵], then go to sub menu. Set the cell to Adjust NON-VSR Setting at the sub menu and press [↵]. Check that the input signal to the monitor is [fH 93.8KHz] and [fV 75.0Hz] and press [↵]. Set the cell to following items, press [↵] and make the adjustment to the value shown at right by using [←] and [→].	②③④⑤⑥⑦⑧: Best point
	H Size, H Position, V Size and V PCC adjustment do not register to interpolation data.				* H. SIZE * H POSITION * V SIZE * V PCC ① V POSITION ⑤ V PCC CORNER ② V LIN (S) ⑥ TRAPEZOID ③ V LIN (C) ⑦ PARALLELOGRAM ④ V PCC (S) ⑧ V PCC BALANCE	① / H Posi : Center H : 392mm V : 294mm
			EE		After adjustment, return to menu of **E2** by pressing [**E**], then return to the main menu by pressing [**E**].	
F	**VSR SETTING** 2) Adjust VSR Setting	☐ Crosshatch	F1 F2 F3 F4	 **(P810-3)-1** 	Set the cell to the menu at left and press [↵]. Set the cell to the adjusting mode INTP [0] and press [↵]. Check that the input signal to the monitor is [fH 29.1kHz] and [fV 47.5Hz] and press [↵]. Set the cell to following items, press [↵] and make the adjustment to the value shown at right by using [←] and [→].	① : 392mm ±5 ③ : 294mm ±5
	V Position adjustment do not register to interpolation data.				* V POSITION ① H. SIZE ③ V SIZE ② H POSITION ④ V PCC GAIN	② / V Posi : Center ④ : Best point
			F5 F6 F7 F8 F9 F10 F11 FE	 **(P810-3)-2** **(P810-3)-3** **(P810-3)-4** 	Press [↵] to register, and return to menu of **F2**. Input signal [fH 52.2kHz] and [fV 92.3Hz] Select Adjusting mode INTP [1], and repeat above (**F4 F5**) procedure. Input signal [fH 75.2kHz] and [fV 137.2Hz] Select Adjusting mode INTP [2], and repeat above (**F4 F5**) procedure. Input signal [fH 96.5kHz] and [fV 182.1Hz] Select Adjusting mode INTP [3], and repeat above (**F4 F5**) procedure. Return to the main menu by pressing [**E**].	

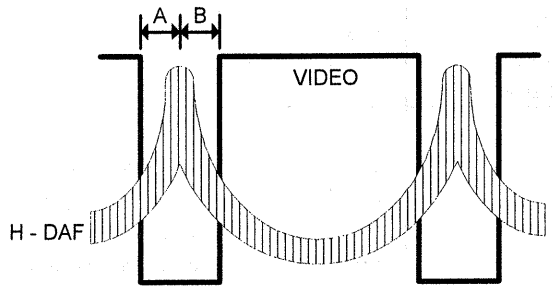
	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
G	**PRESET ADJUST** 4) Adjust Factory preset	☐ Crosshatch	G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 G13 G14 G15 G16 G17 G18 G19	Mode-1 Mode-2 Mode-3 Mode-4 Mode-5 Mode-6 	Set the cell to the menu at left and press [↵]. Check that the input signal to the monitor is [fH 93.8KHz] and [fV 75.0Hz] and press [↵]. Set the cell to following items, press [↵] and make the adjustment to the value shown at right by using [←] and [→]. ① H. SIZE ⑤ V. PCC ② H. POSI ⑥ V. PCC BALANCE ③ V. SIZE ⑦ TRAPEZOID ④ V. POSI ⑧ PARALLEL After adjustment, return to main menu by pressing [**E**] and [**Y**]. Check that the input signal to the monitor is [fH 31.5KHz] and [fV 60.0Hz] and press [↵]. Make adjustment ①~⑧ of **G3** to the value shown at right by using [←] and [→]. After adjustment, return to the menu of **G2** by pressing [**E**] and [**Y**]. Check that the input signal to the monitor is [fH 37.5KHz] and [fV 75.0Hz] and press [↵]. Make adjustment ①~⑧ of **G3** to the value shown at right by using [←] and [→]. After adjustment, return to the menu of **G2** by pressing [**E**] and [**Y**]. Check that the input signal to the monitor is [fH 46.9KHz] and [fV 75.0Hz] and press [↵]. Make adjustment ①~⑧ of **G3** to the value shown at right by using [←] and [→]. After adjustment, return to the menu of **G2** by pressing [**E**] and [**Y**]. Check that the input signal to the monitor is [fH 60.0KHz] and [fV 75.0Hz] and press [↵]. Make adjustment ①~⑧ of **G3** to the value shown at right by using [←] and [→]. After adjustment, return to the menu of **G2** by pressing [**E**] and [**Y**]. Check that the input signal to the monitor is [fH 60.0KHz] and [fV 74.0Hz] and press [↵]. Make adjustment ①~⑧ of **G3** to the value shown at right by using [←] and [→]. After adjustment, return to the menu of **G2** by pressing [**E**] and [**Y**]. **- To be continued -**	① : 392mm ±5 ③ : 294mm ±5 ②④ : Center ⑤⑥⑦⑧ : Best point ① : 392mm ±7 ③ : 294mm ±7 ②④ : Center ⑤⑥⑦⑧ : Best point ① : 392mm ±7 ③ : 294mm ±7 ②④ : Center ⑤⑥⑦⑧ : Best point ① : 392mm ±7 ③ : 294mm ±7 ②④ : Center ⑤⑥⑦⑧ : Best point ① : 392mm ±7 ③ : 294mm ±7 ②④ : Center ⑤⑥⑦⑧ : Best point ① : 392mm ±7 ③ : 294mm ±7 ②④ : Center ⑤⑥⑦⑧ : Best point

	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
G	**PRESET ADJUST** 4) Adjust Factory preset	☐ Crosshatch	G20 G21 G22 G23 G24 GE	Mode-7 Mode-8	Check that the input signal to the monitor is [fH 68.7KHz] and [fV 75.0Hz] and press [↵]. Make adjustment ①~⑧ of **G3** to the value shown at right by using [←] and [→]. After adjustment, return to the menu of **G2** by pressing [**E**] and [**Y**]. Check that the input signal to the monitor is [fH 80.0KHz] and [fV 75.0Hz] and press [↵]. Make adjustment ①~⑧ of **G3** to the value shown at right by using [←] and [→]. After adjustment, return to the menu of **G2** by pressing [**E**] and [**N**], then return to the main menu by pressing [**E**].	① : 392mm ±7 ③ : 294mm ±7 ②④ : Center ⑤⑥⑦⑧ : Best point ① : 368mm ±7 ③ : 294mm ±7 ②④ : Center ⑤⑥⑦⑧ : Best point
H	**CRT CUT-OFF ADJUST** 3) Adjust OTHER setting Adjust VIDEO Setting	◇ TV Color Analyzer II ☐ RGB Off (Sync only)	H1 H2 H3 H4 H5 ~ H14	Mode-1	Set the Contrast to MAX, Brightness to Center and Color is "9300k +8" using the OSD. Check that the input signal to the monitor is [fH 93.8KHz], [fV 75.0Hz] and turn off the RGB signal. Set the cell to the menu at left and press [↵] . Set the cell to <u>Adjust VIDEO Setting</u> at the sub menu and press [↵]. Make the adjustment <u>R,G and B Low Light</u> by using [←] [→] and Screen VR to CRT cut-off. **Please refer to flow chart for this adjustment on page 30.**	
	BRIGHTNESS / COLOR ADJUST	☐ White window (8cm×8cm at center)	H15 H16 H17 H18 H19 H20		Change to the pattern at left. Move the cell to the following items and make the adjustment to the value shown at right by using [←] and [→]. <u>R. SUB CONT (COLOR0)</u> <u>G. SUB CONT (COLOR0)</u> <u>B. SUB CONT (COLOR0)</u> Set Contrast to MIN using the OSD. Move the cell to the following items and make the adjustment to the value shown at right by using [←] and [→]. <u>R. LOW LIGHT</u> <u>G. LOW LIGHT</u> <u>B. LOW LIGHT</u> **Adjust two colors only out of above three as shown in H13 on page 30.** Set Contrast to MAX using the OSD. Check the value shown at right, then If out of range, to repeat **H15~H18**. **- To be continued -**	Y=105 cd/m^2 x=0.283 ±0.20 y=0.298 ±0.20 x=0.283 ±0.20 y=0.298 ±0.20 Y=105 cd/m^2 x=0.283 ±0.20 y=0.298 ±0.20

	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
H	**ABL**	☐ White flat field (full window)	H21	Mode-1	Change to the pattern at left.	
			H22		Move the cell to ABL (COLOR0) and make the adjustment to the value shown at right by using [←] and [→].	Y=95 cd/m^2
			H23		Press [**E**] to messages will appear. **Start automatic calculation. OK (y/n) ->**	
			H24		Press[**Y**]and [↵]. **Refresh LOW-LIGHT2 data (y/n) ->**	
			H25		Press[**Y**]and [↵], then return to menu of **H4**.	
			H26		Return to the main menu by pressing [**E**].	
	1.0V ADJUST 7) Special ADJUST 1: Adjust VIDEO 1.0Vpp	☐ White window (8cm×8cm at center)	H27		Change to the pattern at left.	
			H28		Change signal to 1.0V p-p Video.	
			H29		Set the cell to the menu at left and press [↵].	
			H30		Select the 1: Adjust VIDEO 1.0Vpp from the menu.	
			H31		Make the adjustment to the value shown at right by using [←] and [→].	Y=105 cd/m^2
			HE		Press [↵] to return to menu of **H30**, then return to the main menu by pressing [**E**]	
I	**DAF ADJUST** 2) Adjust VSR setting	☐ White flat field	I 1		Set the cell to the menu at left and press [↵].	
		◇ Oscilloscope	I 2		Set the cell to the menu at left and press [↵].	
		▼ TP5~GND 100:1 probe	I 3		Set the cell to the adjusting mode INTP [0] and press [↵].	
		▼ N1102B ~ GND 10:1 probe	I 4	**(P810-3)-1**	Check that the input signal to the monitor is [fH 29.1kHz] and [fV 47.5Hz].	
			I 5		Set the cell to H DAF PHASE and press [↵].	
			I 6		Adjust as shown at below by using [←] and [→], and press [↵] for registration. (Refer to **Fig. I6** for adjustment on next page)	
			I 7		Set the cell to H DAF GAIN and press [↵].	
			I 8		Adjust as shown at right by using [←] and [→], and press [↵] for registration. (Refer to **Fig. I8** for adjustment on next page)	C - D = 468V
			I 9		Press [↵] to register, and return to menu of **I3**.	
			I 10	**(P810-3)-2**	Input signal [fH 52.2kHz] and [fV 92.3Hz]	
			I 11		Select Adjusting mode INTP [1], and repeat above (**I5 I6 I7 I8 I9**) procedure.	
			I 12	**(P810-3)-3**	Input signal [fH 75.2kHz] and [fV 137.2Hz]	
			I 13		Select Adjusting mode INTP [2], and repeat above (**I5 I6 I7 I8 I9**) procedure.	
			I 14	**(P810-3)-4**	Input signal [fH 96.5kHz] and [fV 182.1Hz]	
			I 15		Select Adjusting mode INTP [3], and repeat above (**I5 I6 I7 I8 I9**) procedure.	
			I E		Return to the main menu by pressing [**E**].	

Fig. I4

Set position to A=B



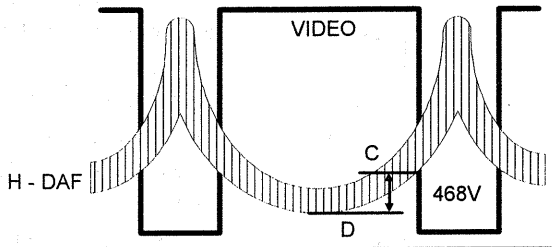
Oscilloscope Range

HV10S - 1 10 µs / div.
HV10S - 2 5 µs / div.
HV10S - 3 5 µs / div.
HV10S - 4 2 µs / div.

Fig. I8

Set voltage to C - D = 468V

C : Clossing VIDEO and H. DAF
D : Bottom of H. DAF



	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
J	**FOCUS**	☐ Character	J1 J2 J3 J4	MODE-1	Check that the input signal to the monitor is [fH 93.8KHz] and [fV 75.0Hz]. Make the corner sections of the screen optimum by turning D-FOCUS VR on the FBT. Make the center section optimum by turning S-FOCUS VR on the FBT. Repeat **J2** and **J3** to make it optimum.	
K	**DATA SAVING** 6) Save data to file		K1 K2		Set the cell to the menu at left and press [↵]. Key in the file name after [ ] :. Use serial number as a file name (EXAMPLE : ×××70100001 = "70100001.DAT")	

	ITEM Program Menu	◇ Test Meter ▼ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
L	**DDC DATA SET** 7) Special ADJUST 7: Change DDC data		L1 L2 L3 L4 L5 L6 LE		Set the cell to the menu at left and press [↵]. Select the 7: Change DDC data from the menu. Key in the monitor **Unit Number** and press [↵]. < ID Serial Number : > (5 digits) Key in the product **Week** and press [↵]. < Week of Manufacture : > (2 digits) Key in the product **Year** and press [↵]. < Year of Manufacture : > (4 digits) Key in the monitor **Unit Number** and press [↵]. < Monitor S/N : > (5 digits) Press [**E**] to return to main menu. To get data of **L3, L6** (U/N), and **L4** (week) **L5** (year) by reading **Fig. L** from the Serial Number.	

Fig. L

×××××	7	0	1	0	0	0	0	1
①	②	③		④				

① Product Code

② Year Code : 7 means 1997

③ Week Code

④ Unit Number

Example

S/N : ×××××70100001

Year -------- 1997

Week ------- 01

Unit No. ----00001

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CRT CUT- OFF ADJUSTMENT

WARNING

Do not turn the screen VR after this adjustment.

Conditions

Signal : Turn off the R,G,B (sync signal only)
Adjust Menu : " 3) Adjust OTHER setting " at main menu
" Adjust VIDEO setting " at sub manu

H5 Set screen VR fully counterclockwise (Min).

H6 Set BRIGHTNESS to center point by using the OSD

H7 Set data value to " 30 " for R, G, B LOW LIGHT

H8 Turn screen VR until the raster appears with any one of three (R,G,B) colors

If Red appears in H8

H9 Set Value to " FF " for < R. LOW LIGHT >

H10 Turn screen VR until the raster appears with any one of two (G or B) colors.

If Green appears in H10

H11 Set Value to " FF " for < G. LOW LIGHT >

H12 Adjust Screen VR to " 0.50 " cd/m² for Blue raster

H13 Adjust < R. LOW LIGHT > < G. LOW LIGHT > to [x=0.283 y=0.298]

If Blue appears in H10

H11 Set Value to " FF " for < B. LOW LIGHT >

H12 Adjust Screen VR to " 3.51 " cd/m² for Green raster

H13 Adjust < R. LOW LIGHT > < B. LOW LIGHT > to [x=0.283 y=0.298]

If Green appears in H8

H9 Set Value to " FF " for < G. LOW LIGHT >

H10 Turn screen VR until the raster appears with any one of two (R or B) colors.

If Red appears in H10

H11 Set Value to " FF " for < R. LOW LIGHT >

H12 Adjust Screen VR to " 0.50 " cd/m² for Blue raster

H13 Adjust < R. LOW LIGHT > < G. LOW LIGHT > to [x=0.283 y=0.298]

If Blue appears in H10

H11 Set Value to " FF " for < B. LOW LIGHT >

H12 Adjust Screen VR to " 1.00 " cd/m² for Red raster

H13 Adjust < G. LOW LIGHT > < B. LOW LIGHT > to [x=0.283 y=0.298]

If Blue appears in H8

H9 Set Value to " FF " for < B. LOW LIGHT >

H10 Turn screen VR until the raster appears with any one of two (R or G) colors.

If Red appears in H10

H11 Set Value to " FF " for < R. LOW LIGHT >

H12 Adjust Screen VR to " 3.51 " cd/m² for Green raster

H13 Adjust < R. LOW LIGHT > < B. LOW LIGHT > to [x=0.283 y=0.298]

If Green appears in H10

H11 Set Value to " FF " for < G. LOW LIGHT >

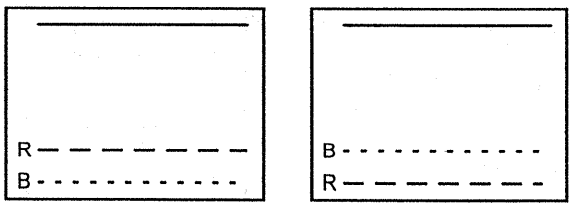
H12 Adjust Screen VR to " 1.00 " cd/m² for Red raster

H13 Adjust < G. LOW LIGHT > < B. LOW LIGHT > to [x=0.283 y=0.298]

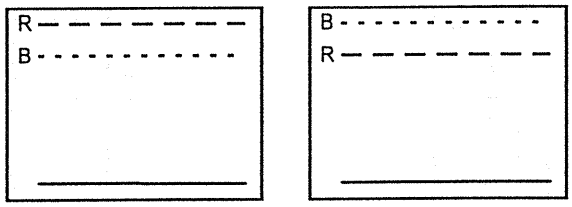
H14 Test Pattern : 16 gradation grayscale. Adjust screen VR so the 2nd level of gray appears slightly.

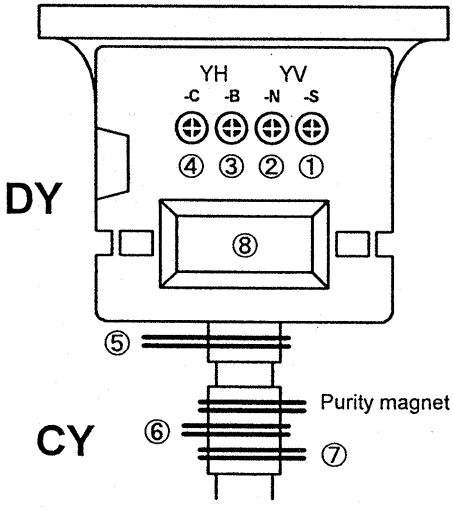
2. Adjustment Location for Purity and Convergence

① Differential VR YV-S

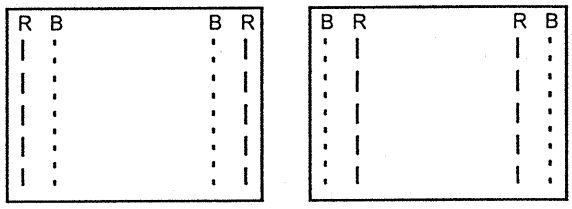


② Differential VR YV-N

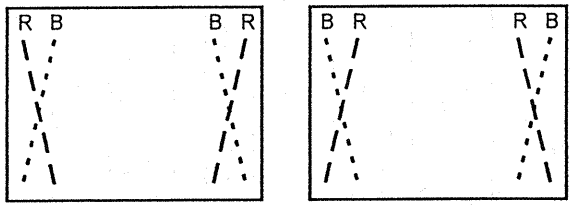




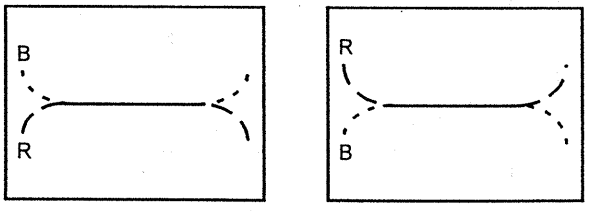
③ Differential VR YH-B



④ Differential VR YH-C



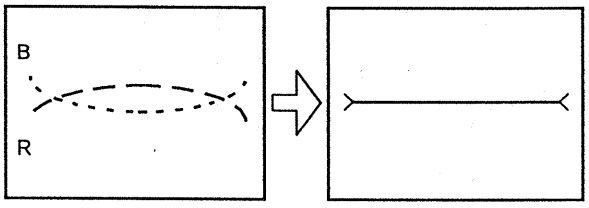
⑤ Four-pole magnet B



Beams are twisted lefthand

Beams are twisted righthand

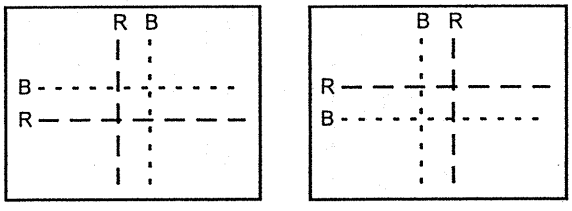
For example lefthand



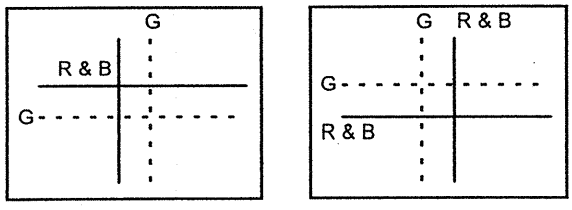
With four-pole magnet B ⑤

With four-pole magnet A ⑥

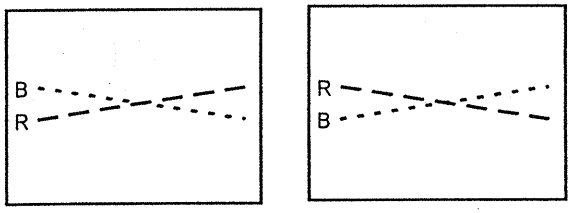
⑥ Four-pole magnet A



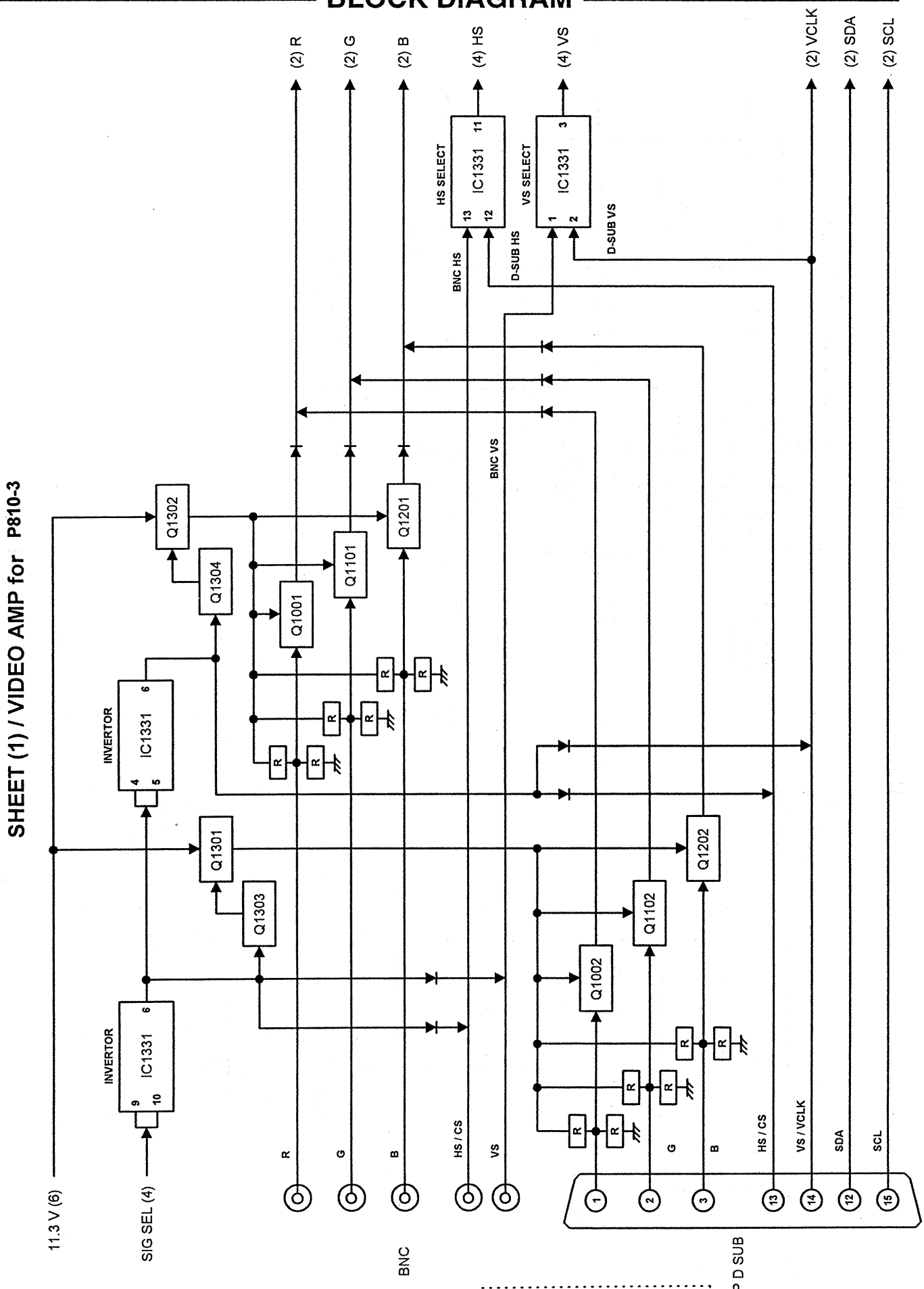
⑦ Six-pole magnet



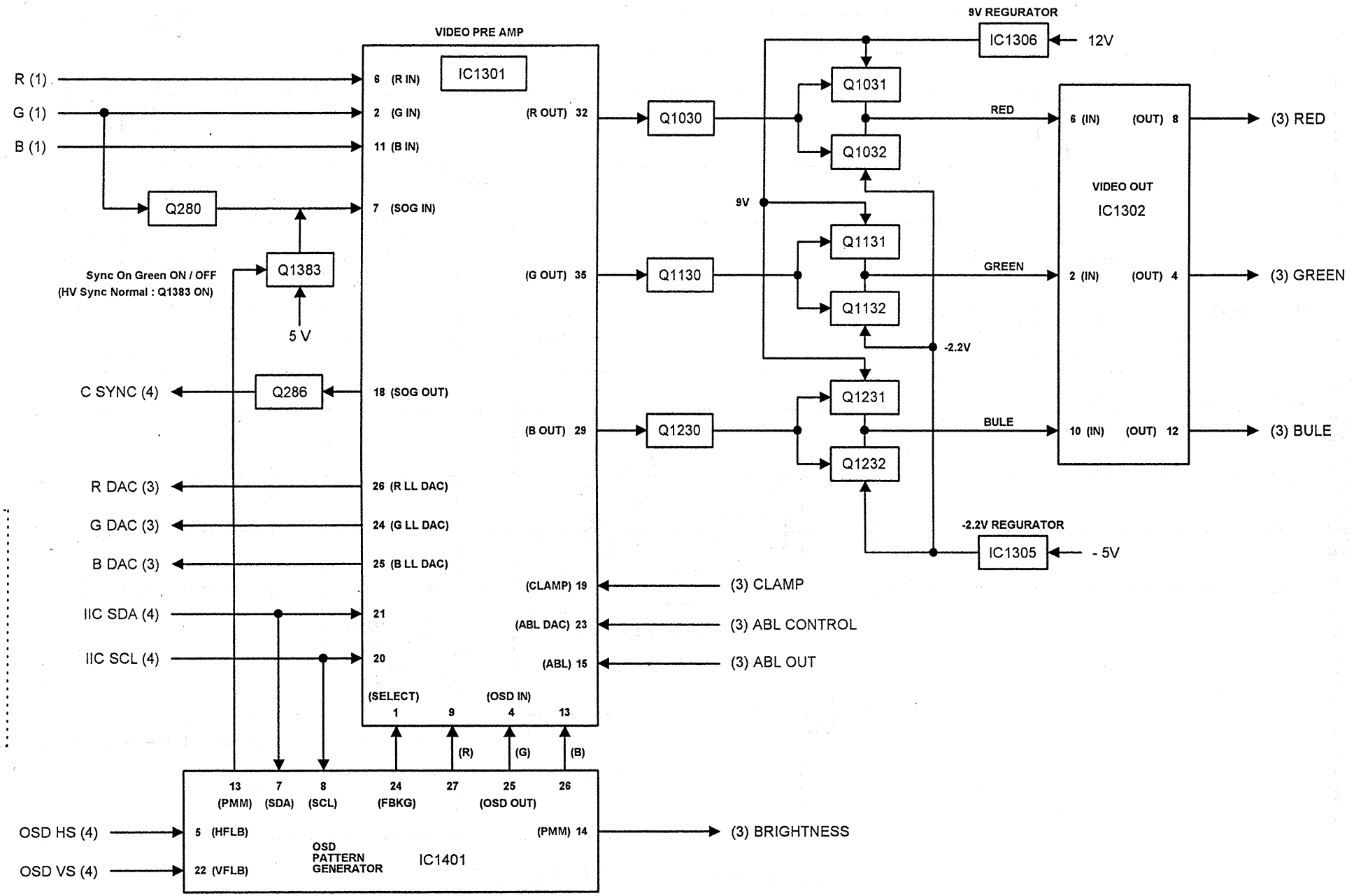
⑧ Differential Coil



BLOCK DIAGRAM



SHEET (2) / VIDEO OUT for P810-3



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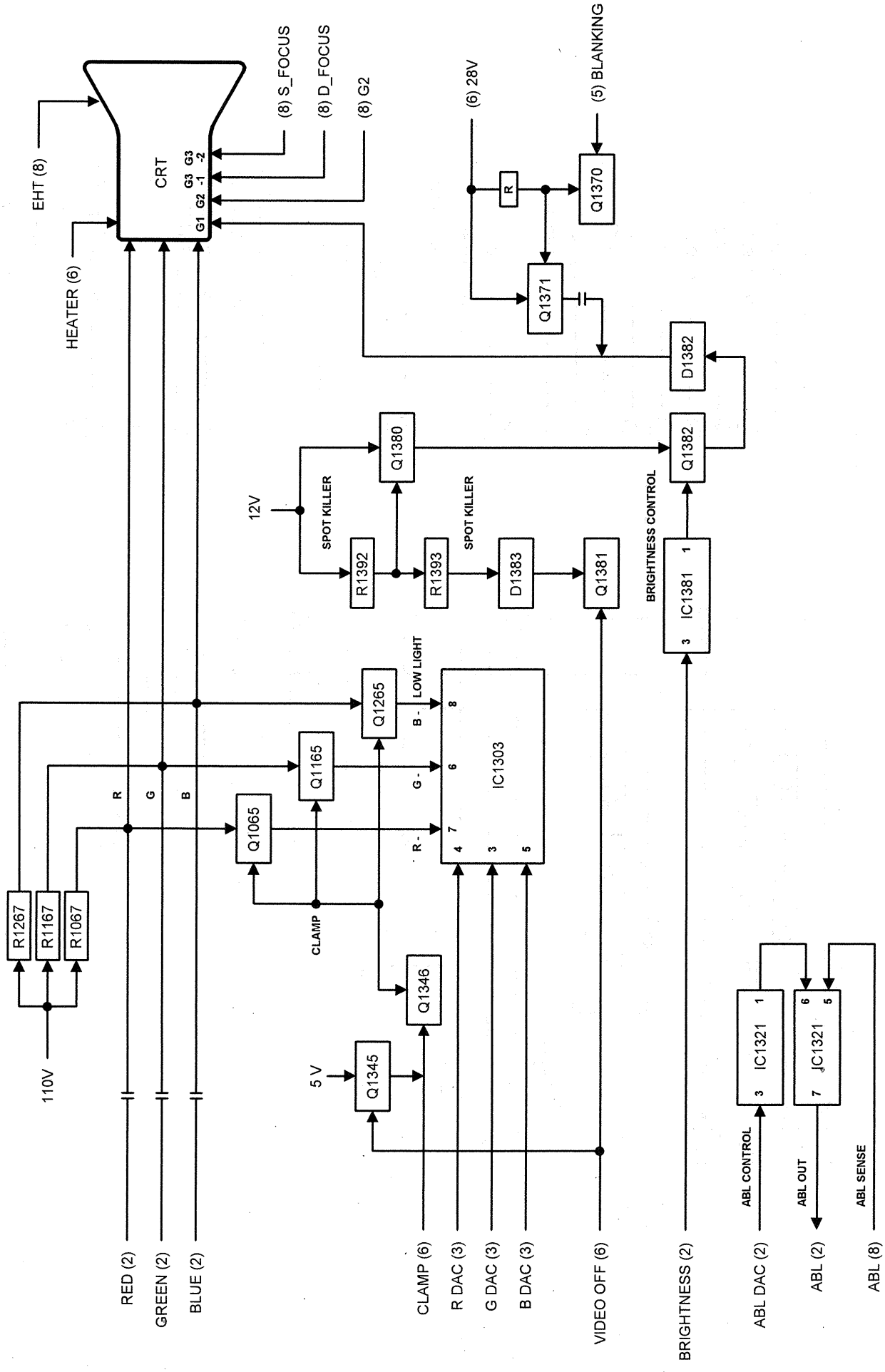
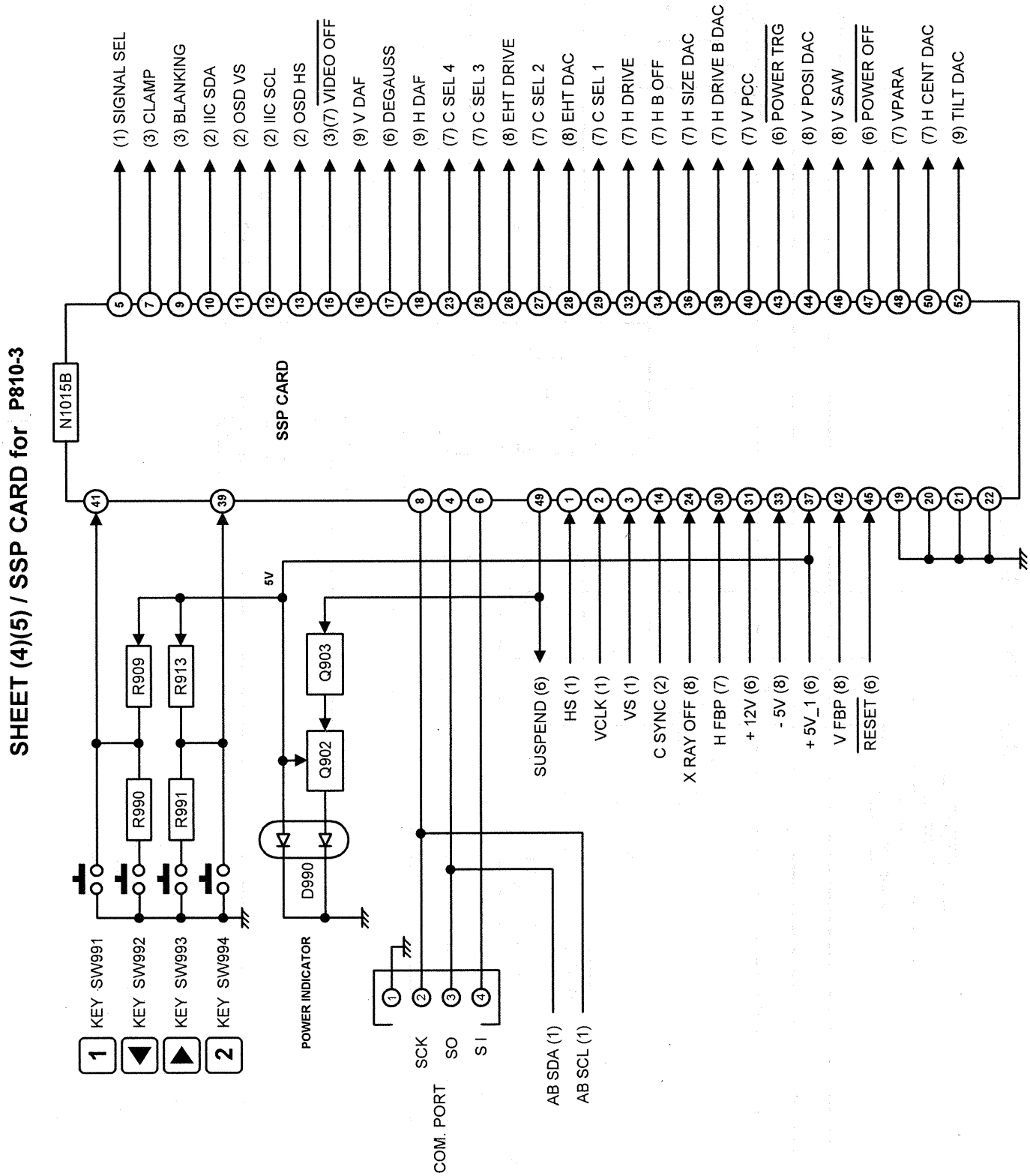
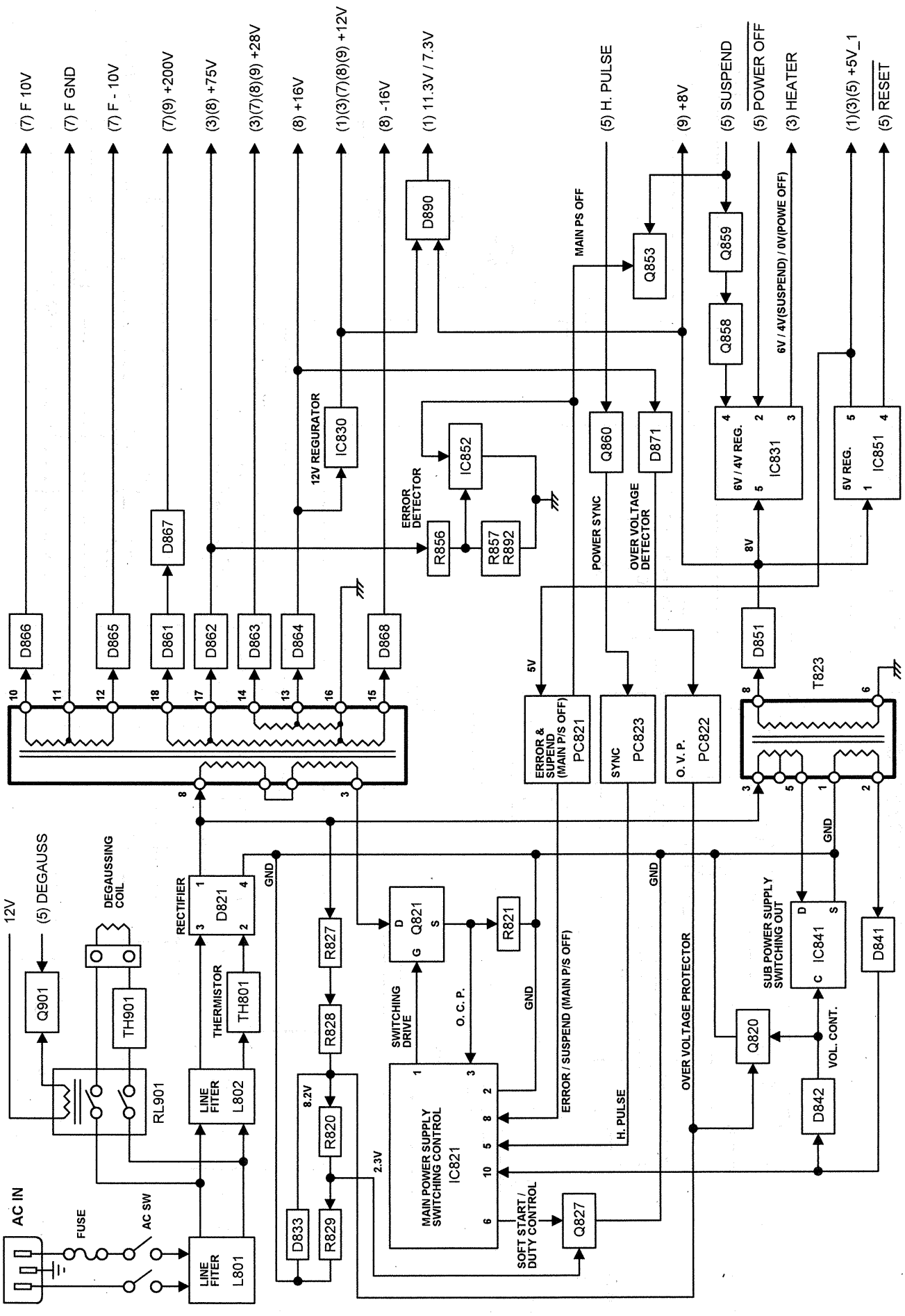
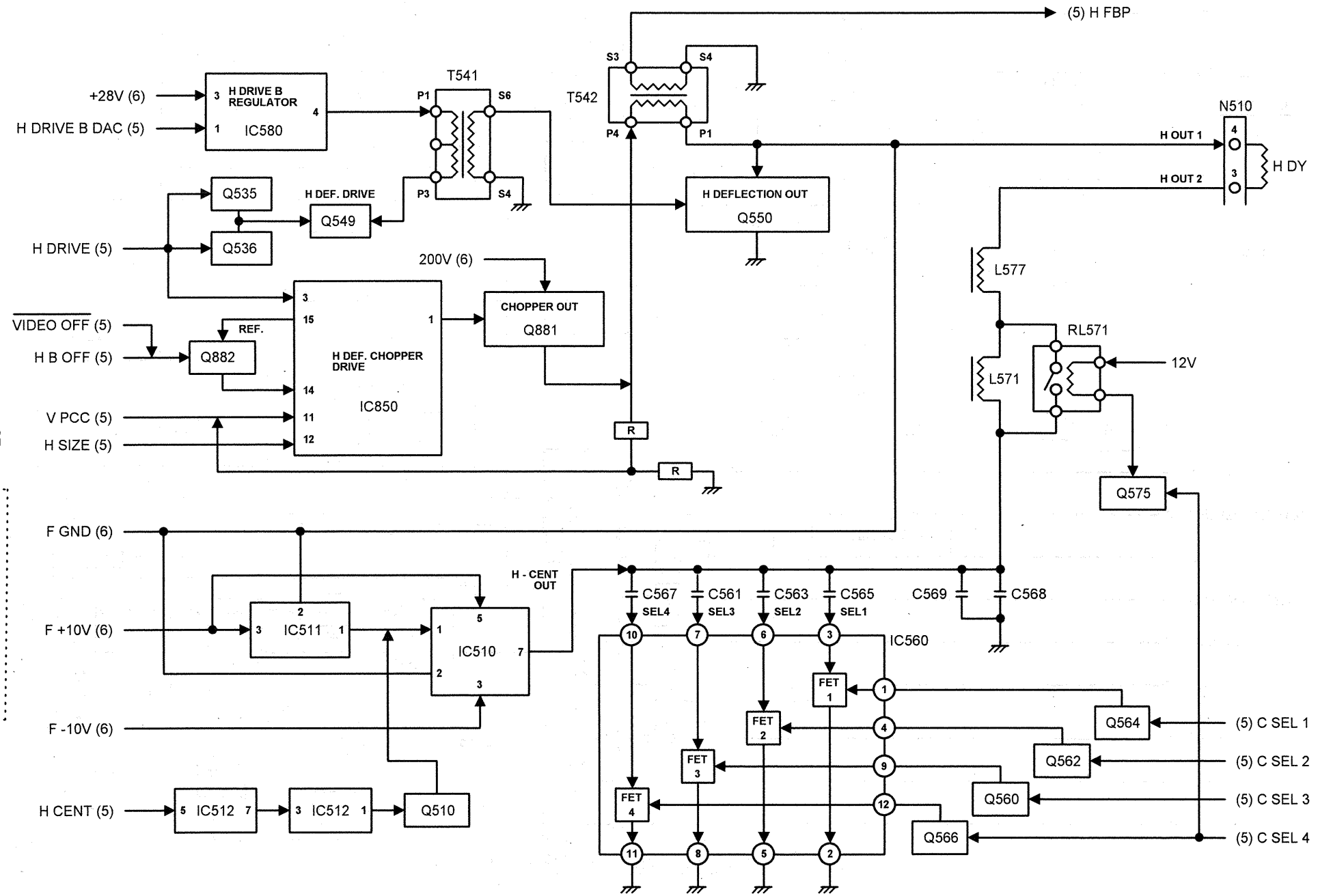
SHEET (3) / VIDEO OUT for P810-3




SHEET (4)(5) / SSP CARD for P810-3
N1015B
SSP CARD
(1) SIGNAL SEL
(3) CLAMP
(3) BLANKING
(2) IIC SDA
(2) OSD VS
(2) IIC SCL
(2) OSD HS
(3)(7) VIDEO OFF
(9) V DAF
(6) DEGAUSS
(9) H DAF
(7) C SEL 4
(7) C SEL 3
(8) EHT DRIVE
(7) C SEL 2
(8) EHT DAC
(7) C SEL 1
(7) H DRIVE
(7) H B OFF
(7) H SIZE DAC
(7) H DRIVE B DAC
(7) V PCC
(6) POWER TRG
(8) V POSI DAC
(8) V SAW
(6) POWER OFF
(7) VPARA
(7) H CENT DAC
(9) TILT DAC
5V
R909
R913
R990
R991
Q903
Q902
D990
KEY SW991
KEY SW992
KEY SW993
KEY SW994
POWER INDICATOR
SUSPEND (6)
HS (1)
VCLK (1)
VS (1)
C SYNC (2)
X RAY OFF (8)
H FBP (7)
+ 12V (6)
- 5V (8)
+ 5V_1 (6)
V FBP (8)
RESET (6)
SCK
SO
SI
COM. PORT
AB SDA (1)
AB SCL (1)


SHEET (6) / POWER SUPPLY for P810-3
AC IN
FUSE
AC SW
LINE FITER L801
LINE FITER L802
RL901
12V
(5) DEGAUSS
Q901
DEGAUSSING COIL
TH901
THERMISTOR
TH801
RECTIFIER
D821
GND
8.2V
R820
R829
D833
2.3V
R827
R828
SWITCHING DRIVE
Q821
O. C. P.
R821
MAIN POWER SUPPLY SWITCHING CONTROL IC821
SOFT START / DUTY CONTROL
Q827
ERROR / SUSPEND (MAIN P/S OFF)
H. PULSE
OVER VOLTAGE PROTECTOR
Q820
SUB POWER SUPPLY SWITCHING OUT
IC841
D841
D842
VOL. CONT.
T823
PC821
ERROR & SUPEND (MAIN P/S OFF)
PC823
SYNC
PC822
O. V. P.
5V
8V
POWER SYNC
OVER VOLTAGE DETECTOR
MAIN PS OFF
Q853
Q860
D871
Q859
Q858
6V / 4V REG.
IC831
6V / 4V(SUSPEND) / 0V(POWE OFF)
5V REG.
IC851
ERROR DETECTOR
R856
IC852
R857
R892
12V REGURATOR
IC830
D890
D851
D866
D865
D867
D861
D862
D863
D864
D868
(7) F 10V
(7) F GND
(7) F - 10V
(7)(9) +200V
(3)(8) +75V
(3)(7)(8)(9) +28V
(8) +16V
(1)(3)(7)(8)(9) +12V
(8) -16V
(1) 11.3V / 7.3V
(5) H. PULSE
(9) +8V
(5) SUSPEND
(5) POWER OFF
(3) HEATER
(1)(3)(5) +5V_1
(5) RESET

SHEET (7) / HORIZONTAL DEFLECTION for P810-3



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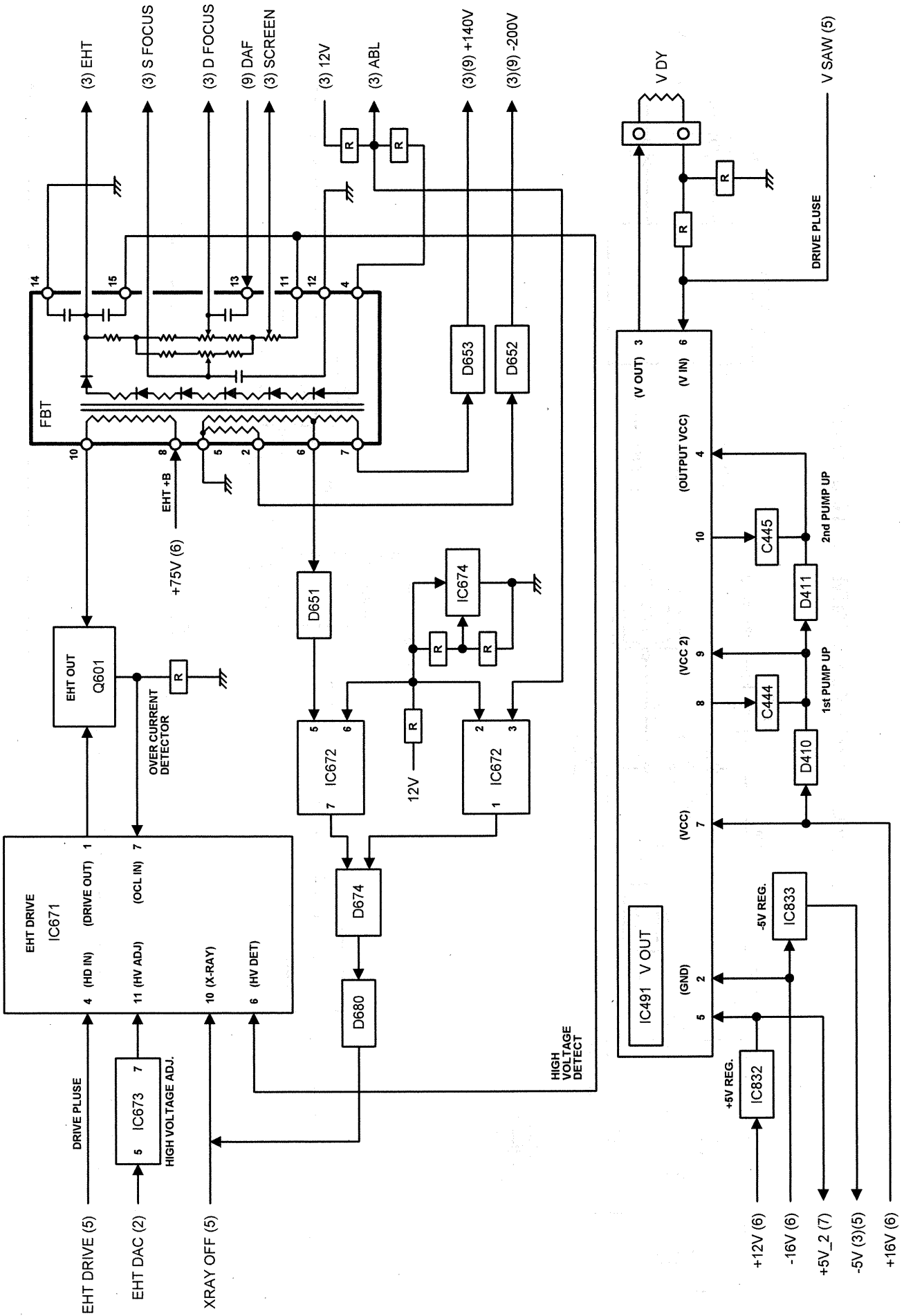
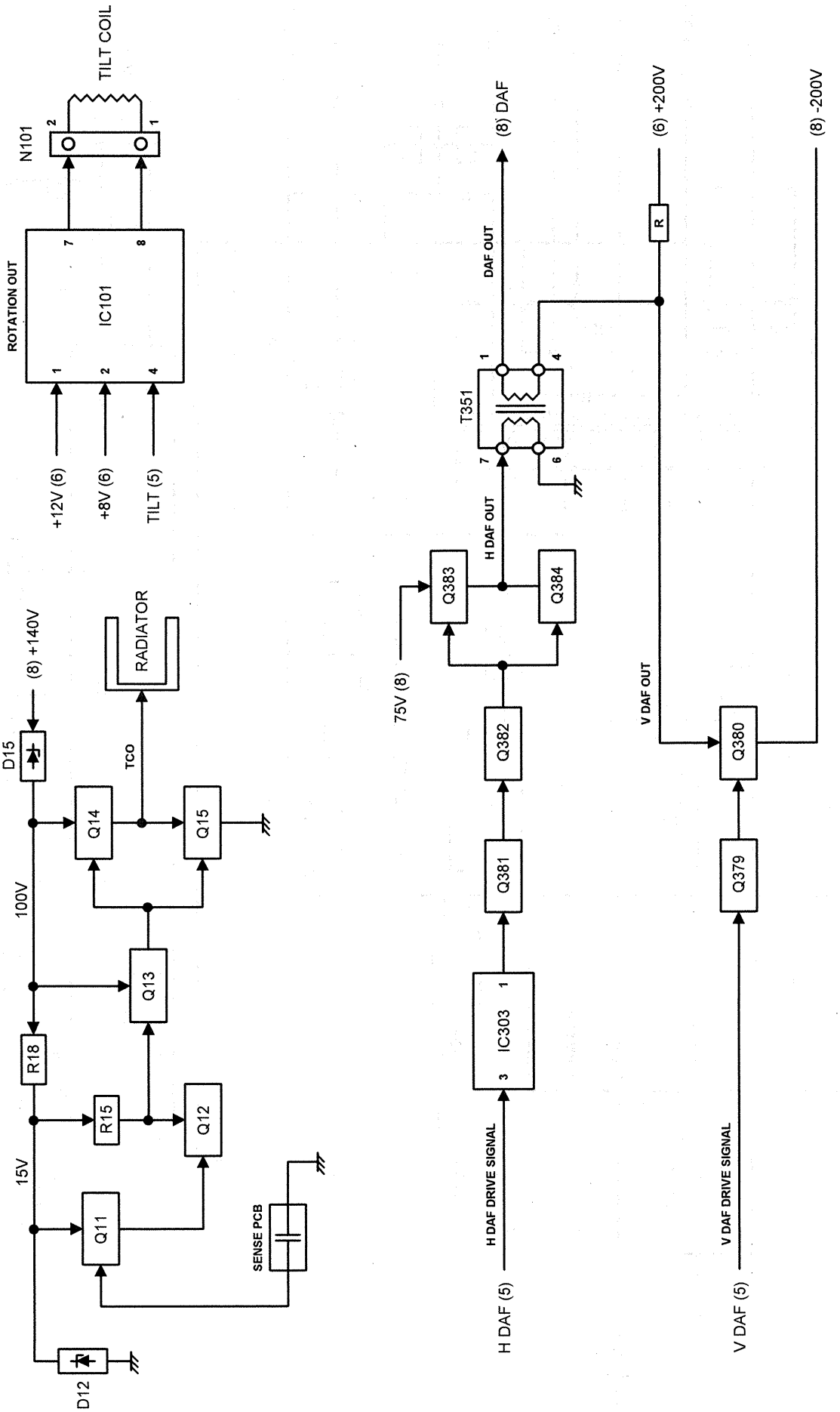
SHEET (8) / EHT OUT for P810-3



SHEET (9) DAF OUT / TILT CONTROL / TCO for P810-3



• NO CHARACTERS
• MISSING ONE COLOR

EXAMPLE : GREEN MISSING
SIGNAL IN : 15P D-SUB

- CRT KG 70V 0-p ? — YES → NO RASTER
- NO
- IC1302 (4) 68.4V 0-p ? — YES → CHECK • IC1303 • Q1165
- NO
- IC1302 (2) 1.9V 0-p ? — YES → CHECK IC1302
- NO
- IC1301 (35) 4.8V 0-p ? — YES → CHECK • Q1130 • Q1132 • Q1131
- NO
- IC1301 (2) 3.0V 0-p ? — YES → CHECK IC1301
- NO
- Q1102 (B) 3.2V 0-p ? — YES → CHECK Q1102
- NO

CHECK
• IC1331 • Q1303
• Q1301 • INPUT SIG.

OSD DOES NOT WORK

EXAMPLE : GREEN MISSING
CONDITION : OSD ON

- IC1301 (4) 5V p-p ? — YES → IC1301 (1) 5V p-p ?
- NO
- IC1401 (5) 4.9V p-p ? — NO → CHECK SSP CARD (13)
- YES
- IC1401 (22) 4.9V p-p ? — NO → CHECK SSP CARD (11)
- YES

CHECK
• IC1401
• SSP CARD
• FRONT SWITCH

- IC1301 (1) 5V p-p ? — NO → CHECK IC1401
- YES

CHECK IC1301

NO POWER

- D851 (C) 8V ? — NO (SUB & MAIN P/S OFF) → T823 (8) CORRECT ? — YES → CHECK • IC841 • T823
- NO
- YES (MAIN P/S OFF)
- IC821 (8) LOW ? — YES (POWE SAVE ACTIVE) → D821 (2)(3) AC OK ? — NO → CHECK AC line
- NO
- YES
- Q821 (G) 19.0V p-p ? — YES → CHECK Q821
- NO
- CHECK IC821
- OK

CHECK
• D861 • D862 • D863
• D864 • D865 • D866
• D867 • D868
• SECOND. POWER line

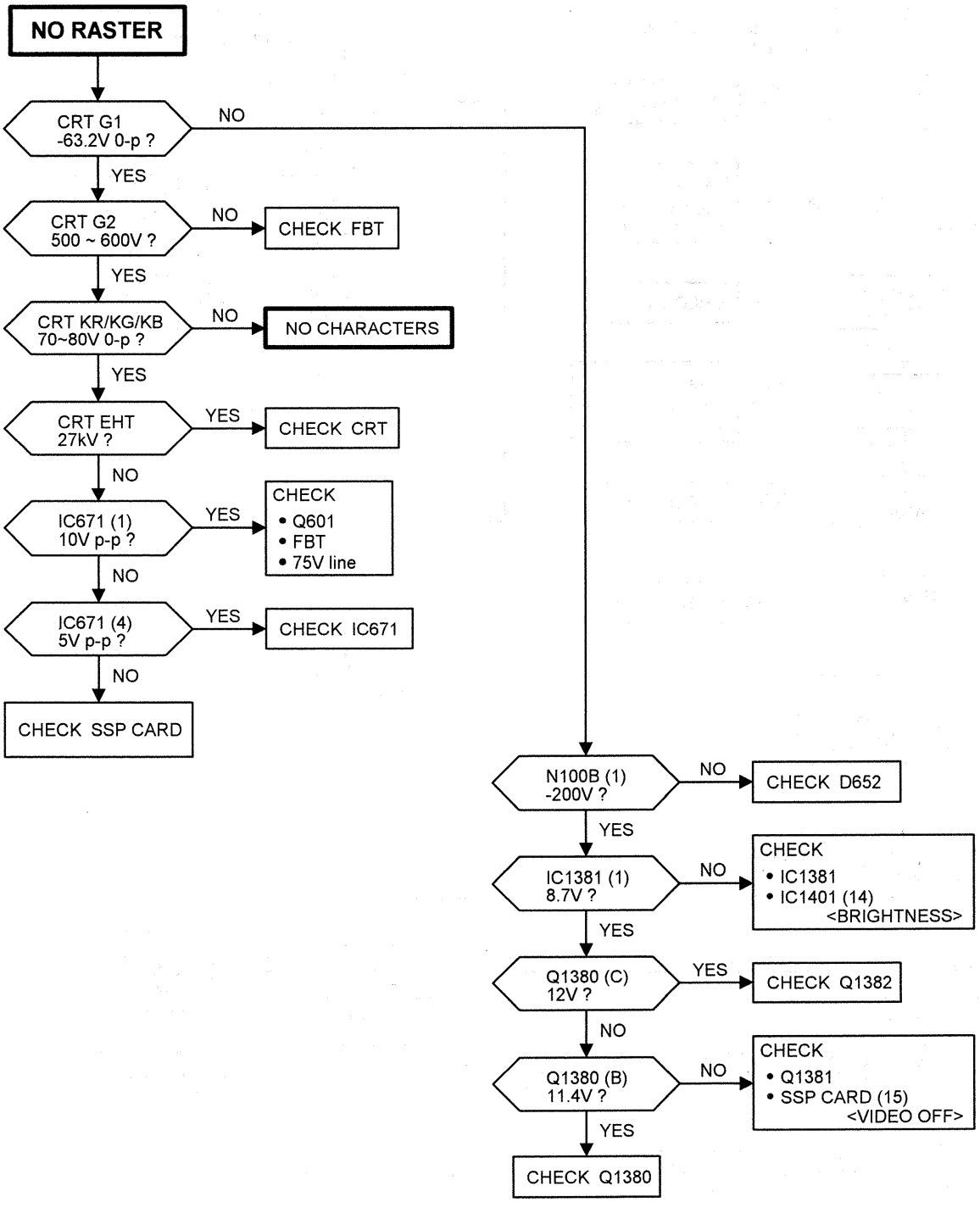
Voltage of T823 (8)

AC Input	IC841 (D)
100V	121V
120V	149V
220V	275V
240V	309V

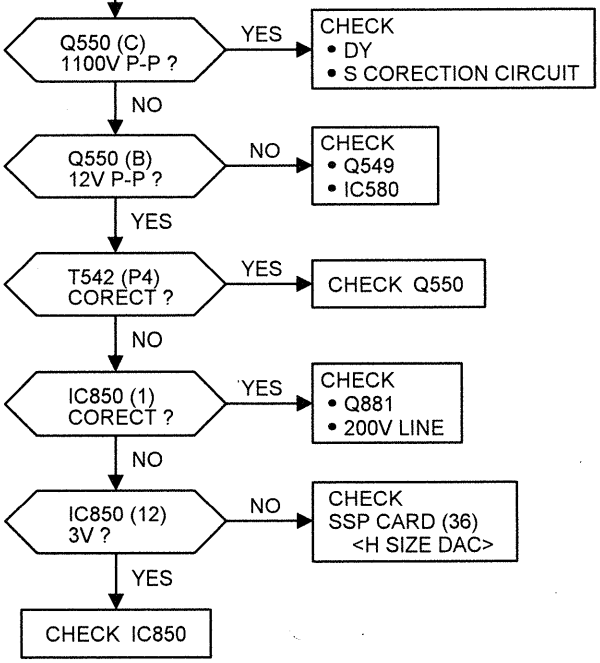
CHECK D821

- Q853 (B) 0V ? — NO → CHECK • SSP CARD (49) • INPUT SYNC SIGNAL
- YES

CHECK
• Q853 • PC821


NO RASTER
CRT G1
-63.2V 0-p ?
NO
YES
CRT G2
500 ~ 600V ?
NO
CHECK FBT
YES
CRT KR/KG/KB
70~80V 0-p ?
NO
NO CHARACTERS
YES
CRT EHT
27kV ?
YES
CHECK CRT
NO
IC671 (1)
10V p-p ?
YES
CHECK
• Q601
• FBT
• 75V line
NO
IC671 (4)
5V p-p ?
YES
CHECK IC671
NO
CHECK SSP CARD
N100B (1)
-200V ?
NO
CHECK D652
YES
IC1381 (1)
8.7V ?
NO
CHECK
• IC1381
• IC1401 (14)
<BRIGHTNESS>
YES
Q1380 (C)
12V ?
YES
CHECK Q1382
NO
Q1380 (B)
11.4V ?
NO
CHECK
• Q1381
• SSP CARD (15)
<VIDEO OFF>
YES
CHECK Q1380

INCORRECT H SIZE SIGNAL : MODE -1

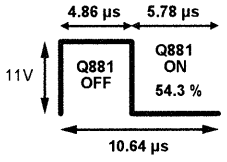


Voltage of T542 (P4)

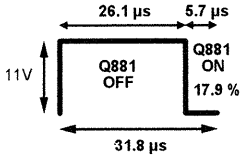
	f H	Value
MODE - 1	93.8 kHz	126.5V
MODE - 2	31.5 kHz	42.2V
MODE - 3	46.9 kHz	62.5V
MODE - 4	60.0 kHz	78.8V
MODE - 5	68.7 kHz	89.6V
MODE - 6	64.0 kHz	82.5V
MODE - 7	80.0 kHz	101.9V
MODE - 8	87.5 kHz	116.9V

IC850 (1) OUTPUT

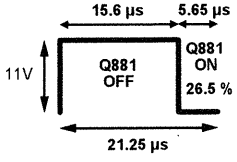
<MODE - 1 : 93.8 kHz>



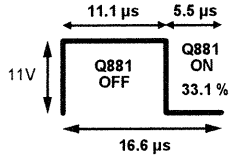
<MODE - 2 : 31.5 kHz>



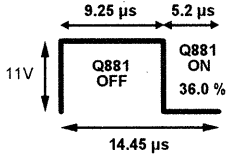
<MODE - 3 : 46.9 kHz>



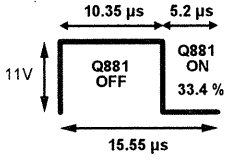
<MODE - 4 : 60.0 kHz>



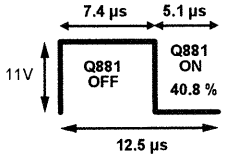
<MODE - 5 : 68.7 kHz>



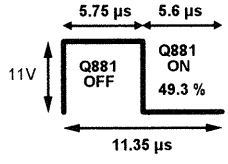
<MODE - 6 : 64.0 kHz>



<MODE - 7 : 80.0 kHz>



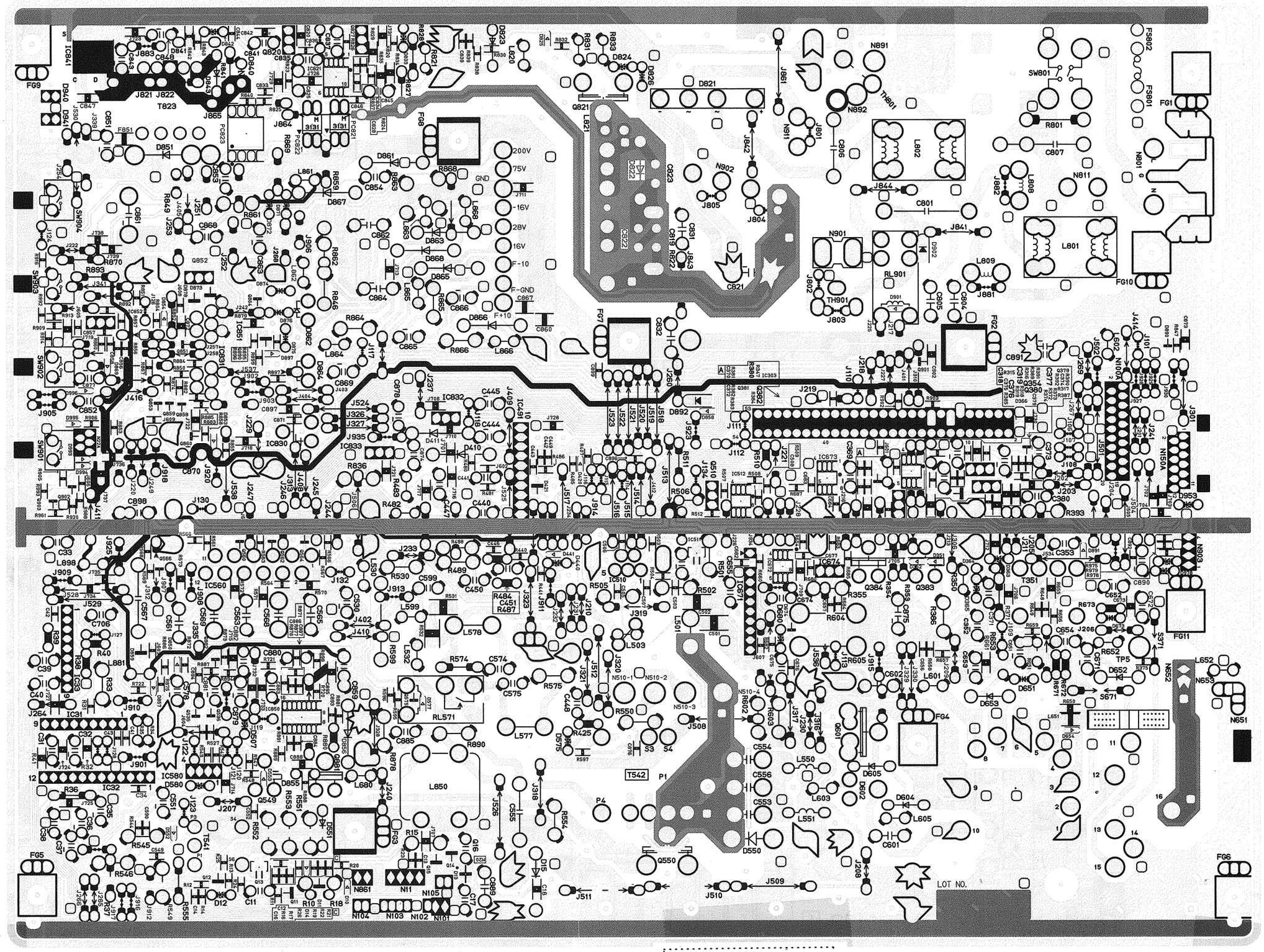
<MODE - 8 : 87.5 kHz>



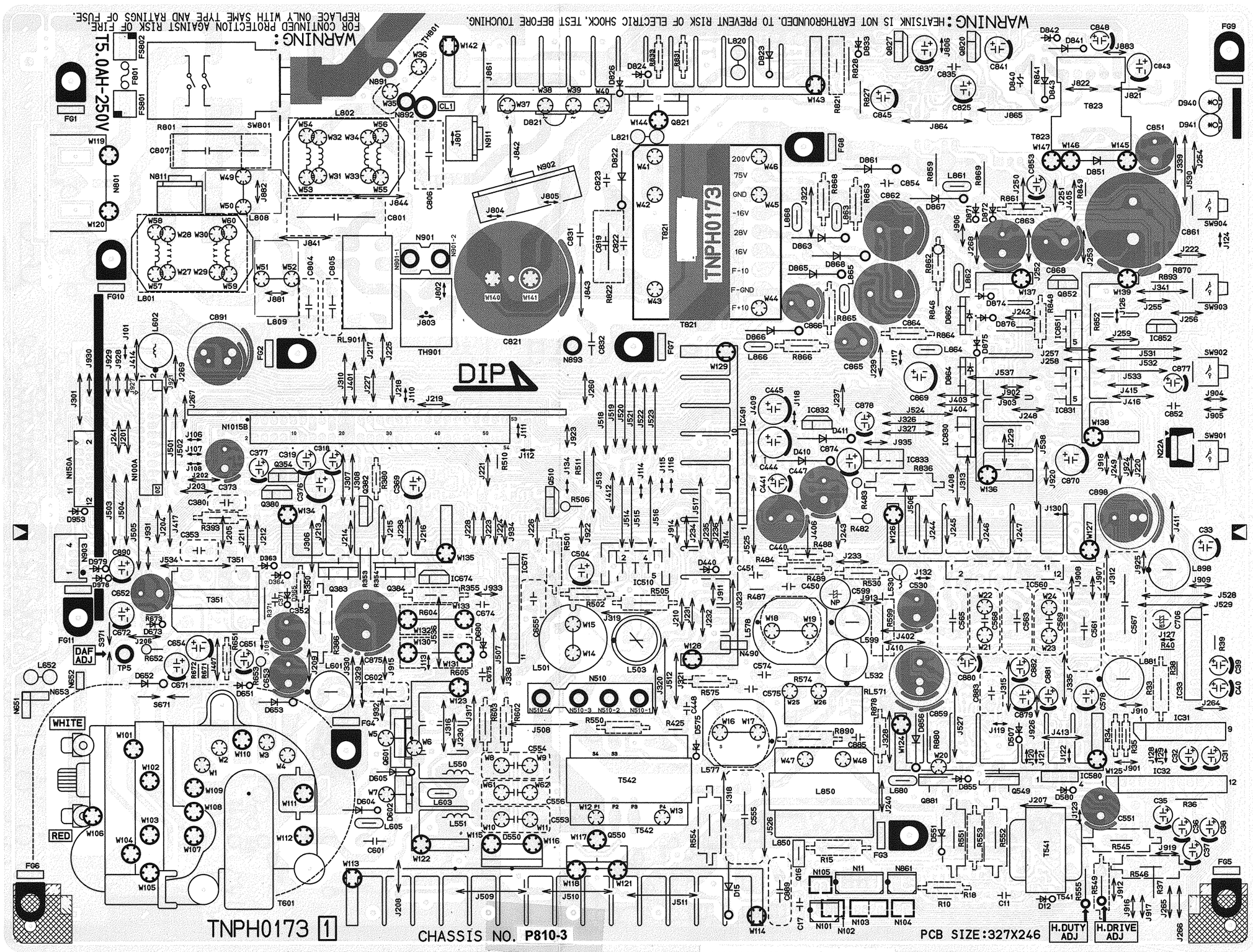
IC560 ①④⑨⑫ VOLTAGE

SIGNAL	f H	Pin #1	Pin #4	Pin #9	Pin #12	Total Cap.
MODE-1	93.8 kHz	0 V	0 V	0 V	0 V	0.30µF
MODE-2	31.5 kHz	0 V	12 V	12 V	12 V	3.28µF
MODE-3	46.9 kHz	12 V	0 V	12 V	0 V	1.27µF
MODE-4	60.0 kHz	12 V	12 V	0 V	0 V	0.81µF
MODE-5	68.7 kHz	0 V	12 V	0 V	0 V	0.66µF
MODE-6	64.0 kHz	12 V	12 V	0 V	0 V	0.81µF
MODE-7	80.0 kHz	12 V	0 V	0 V	0 V	0.45µF
MODE-8	87.5 kHz	0 V	0V	0 V	0 V	0.30µF

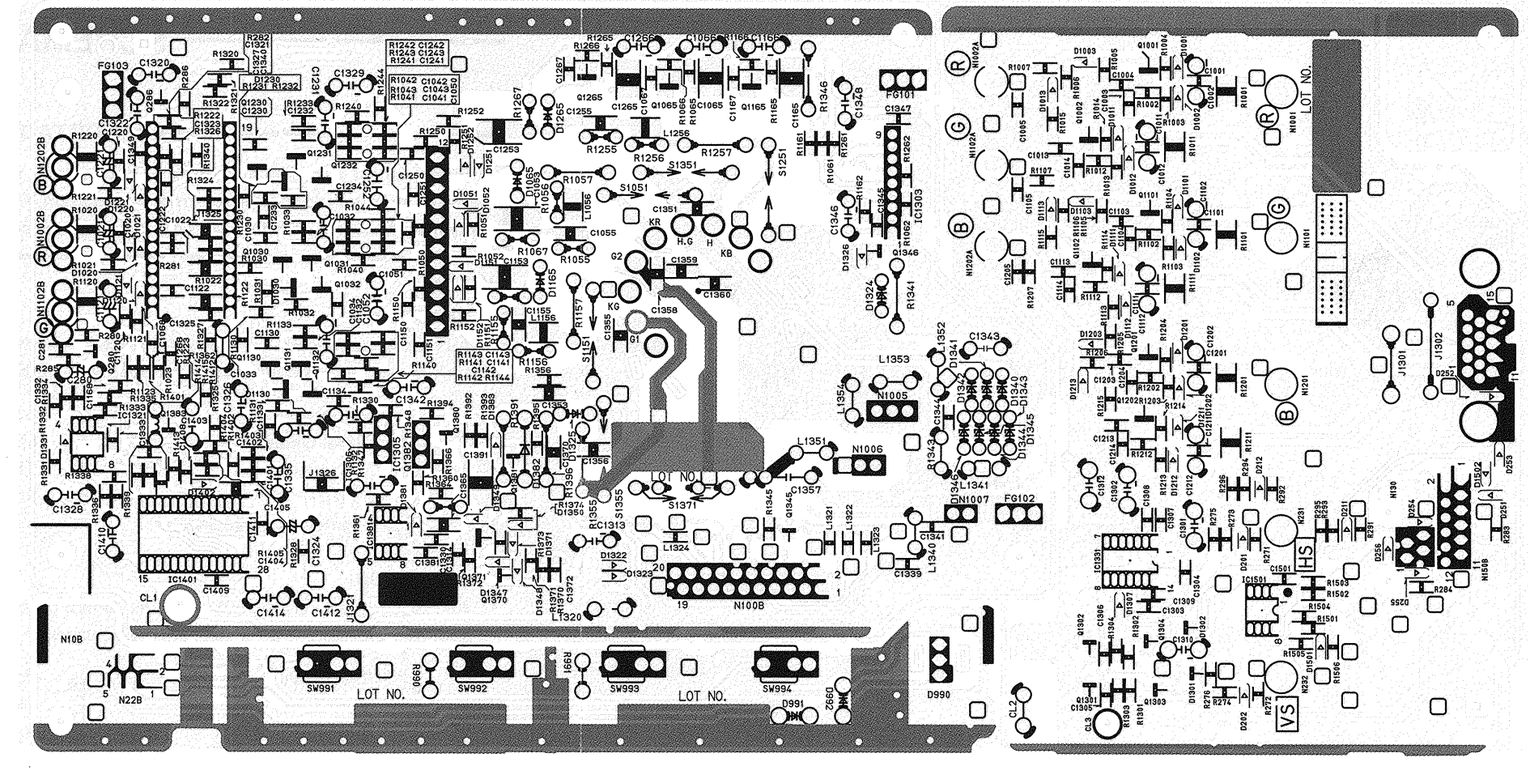
MAIN BOARD (Solder side)



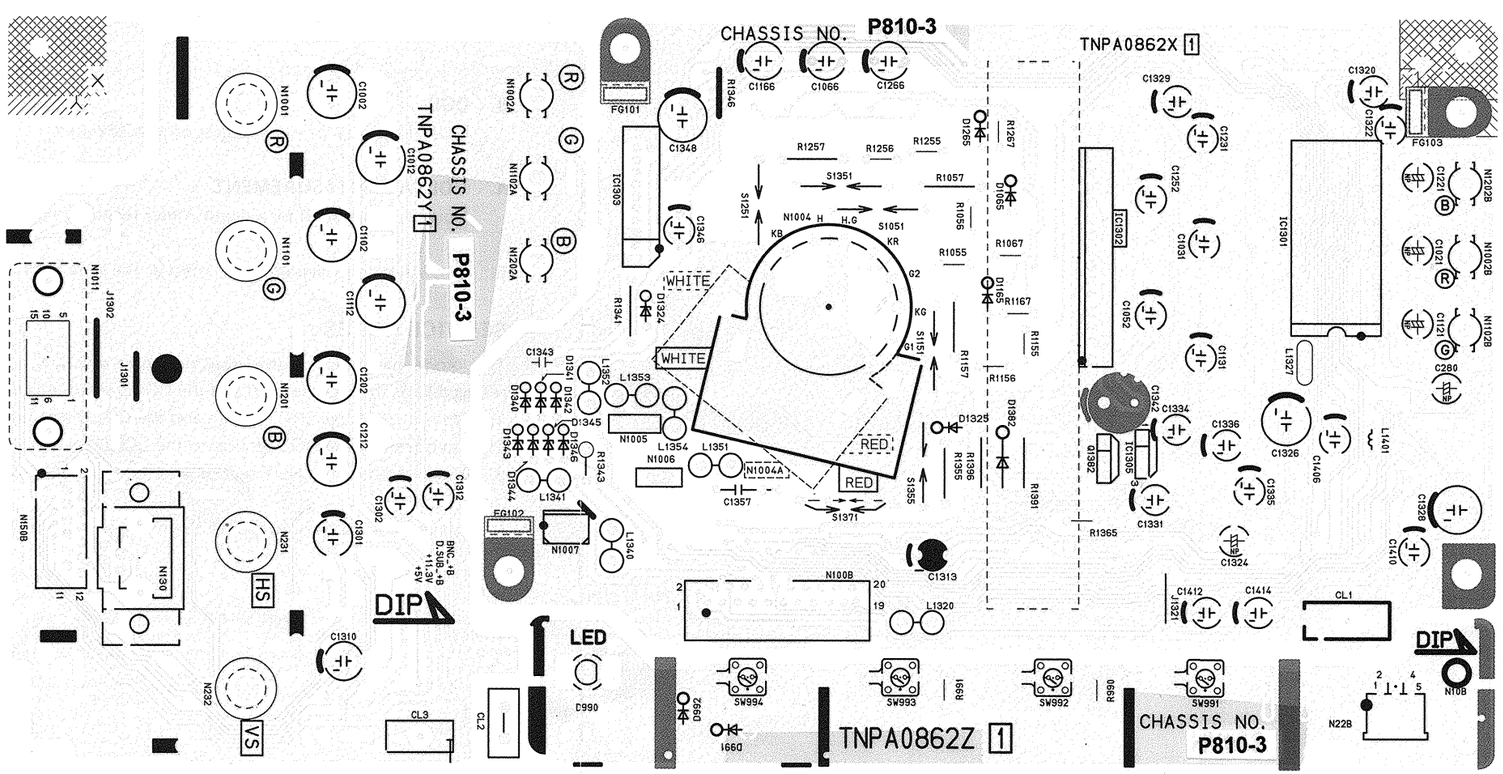
MAIN BOARD (Parts side)



VIDEO BOARD (Solder side)



VIDEO BOARD (Parts side)



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE

The component identified by shading or international symbol ⚠ on the following schematic diagrams incorporate special features important for protection from X-Radiation, fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for those critical components.

NOTES :

1. RESISTOR

All resistors are carbon 1/4W resistor, unless otherwise noted by the following marks.
Unit of resistance is ohm (Ω), (K = 1,000, M = 1,000,000)

- ◯ : Non Flammable
- ⊠ : Metal Oxide
- □ : Wire Wound
- ⊗ : Fusible
- ◪ : Flame Proof Rectangular
- △ : Solid
- ◎ : Metal (Precision and high stability)
- Thermistor
- Positive coefficient Thermistor

2. CAPACITOR

All capacitors are ceramic 50V capacitor, unless otherwise noted by the following marks.
Unit of capacitance is μF, unless otherwise noted.

- Electrolytic
- Ⓣ : Tantalum
- NP : Bipolar
- Ⓢ : Polystyrene
- ⊗ : Temperature Compensation
- Ⓜ : Polyester
- ⓜ : Metalized Polyester
- ⊠ : Polypropylene
- △ : Mica
- ◯ : Ceramic
- ◎ : Ceramic (SL)

3. COIL

Unit of inductance is μH, unless otherwise noted.

4. VOLTAGE MEASUREMENT

Voltage is measured by a digital meter receiving normal signal.

5. This schematic diagram is the letest at the time of printing and is subject to change without notice.

SERVICE NOTES :

This model has a section that does not share a common ground with the power supply section. The different sections are referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may receive an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscilloscopes or multimeters.
4. Always unplug the unit before beginning any operation such as removing the chassis.

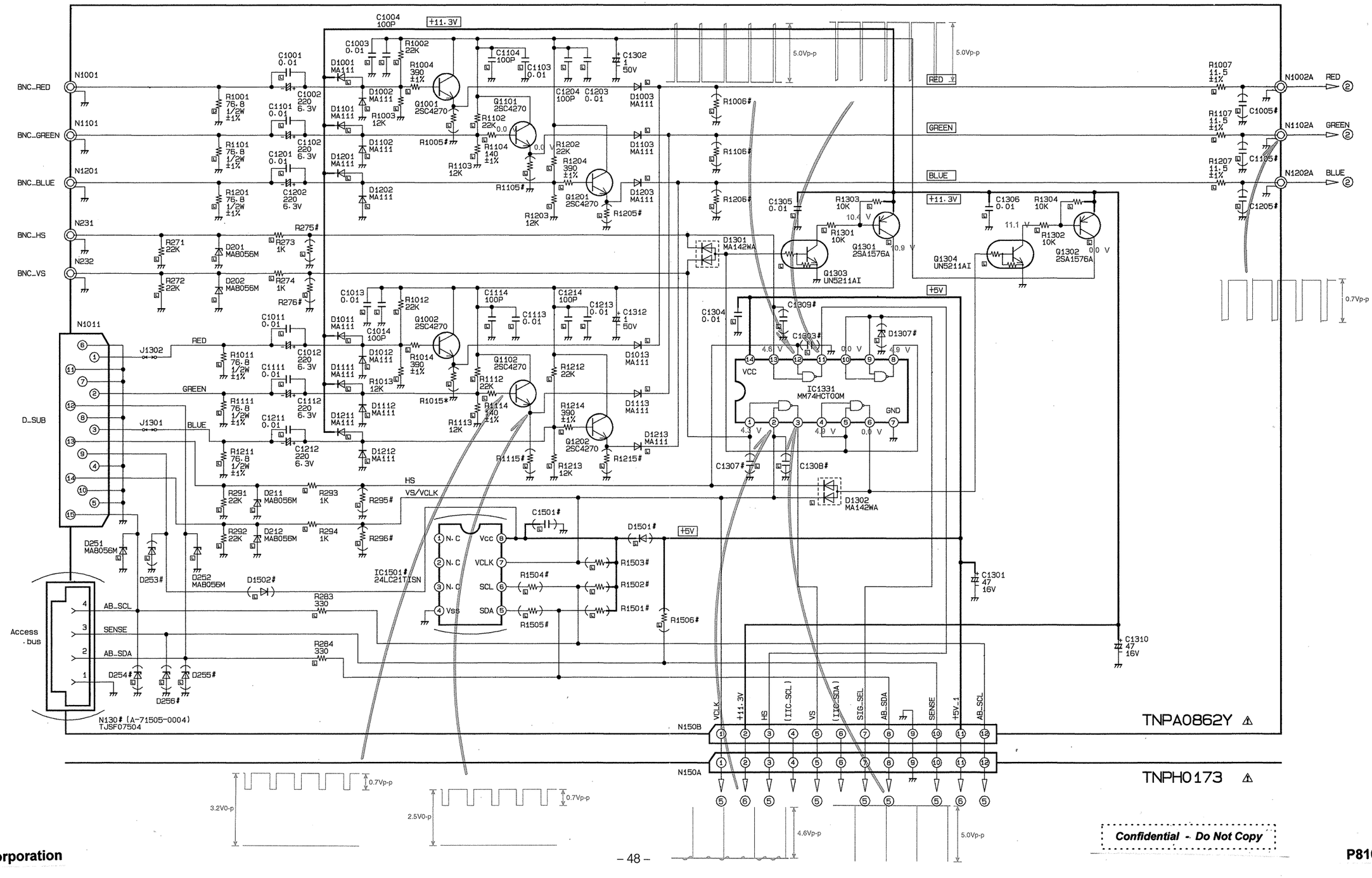
SCHEMATIC DIAGRAM FOR MODEL No. :

P810-3

CHASSIS No. : **P810-3**

CHASSIS FAMILY NO. : 21HV10S

SHEET (1)



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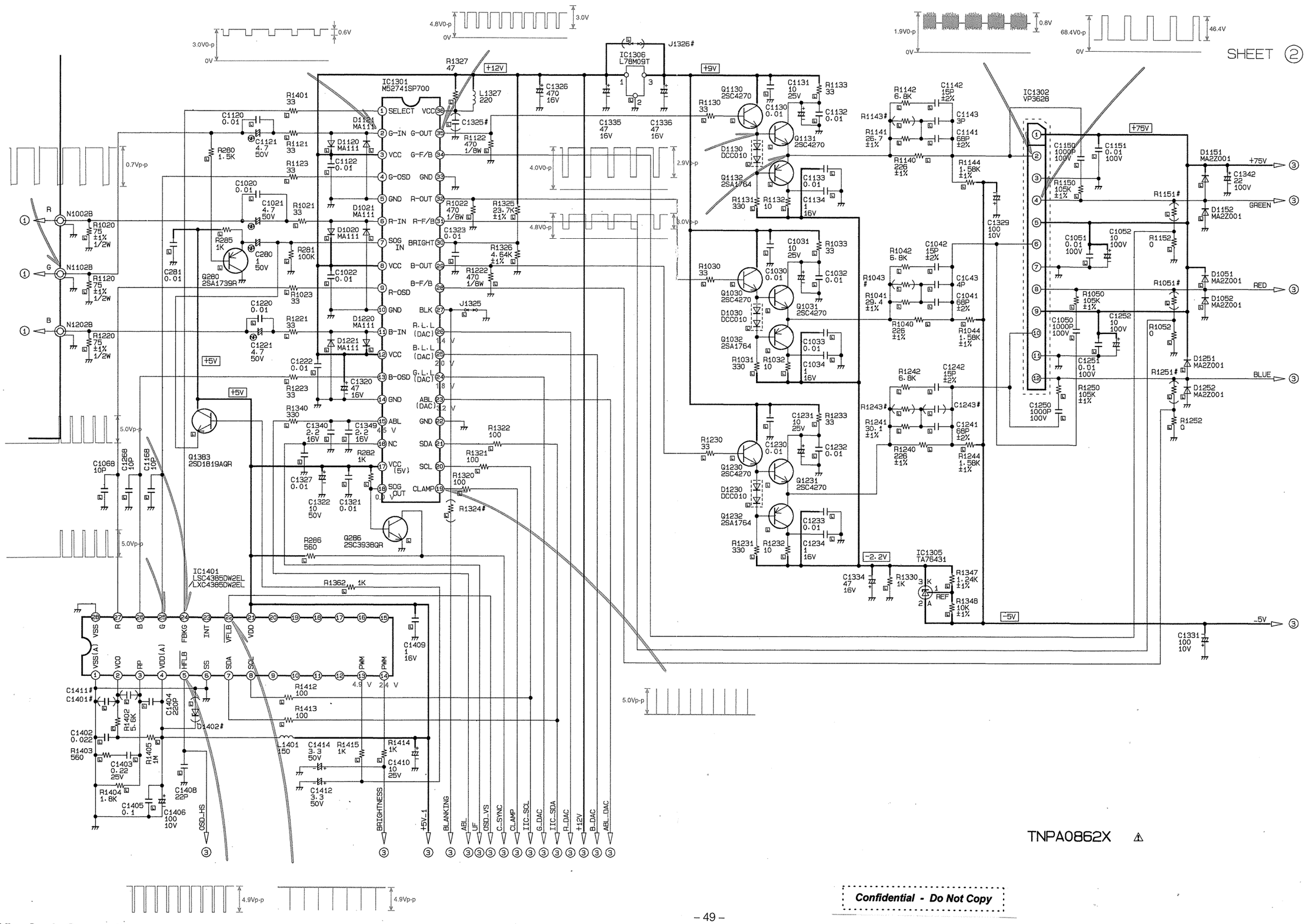
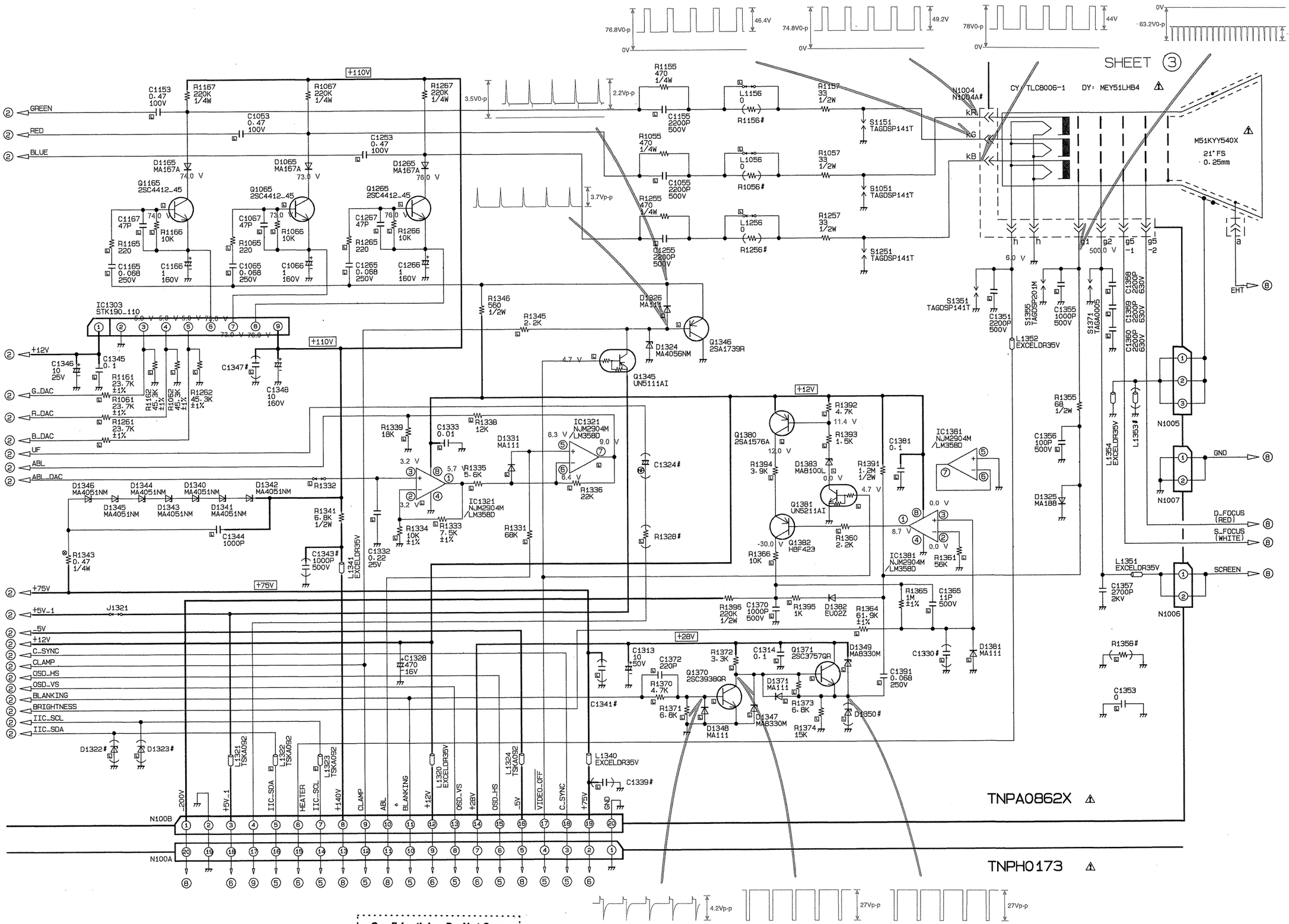

SHEET ②
IC1301 MS2741SP700
IC1306 L78M09T
IC1302 VP3628
IC1305 TA76431
IC1401 LSC4385DW2EL LXC4385DW2EL
+12V
+9V
+75V
+5V
-2.2V
-5V
SELECT
G-IN
VCC
G-OSD
GND
R-IN
SOG IN
VCC
B-IN
VCC
B-OSD
GND
ABL
NC
VCC (5V)
SOG OUT
G-OUT
G-F/B
GND
R-OUT
R-F/B
BRIGHT
B-OUT
B-F/B
R-OSD
GND
BLK
R.L.L (DAC)
B.L.L (DAC)
G.L.L (DAC)
ABL (DAC)
GND
SDA
SCL
CLAMP
R
G
B
GREEN
RED
BLUE
BRIGHTNESS
+5V-1
BLANKING
ABL
UF
OSD_VS
C_SYNC
CLAMP
IIC_SCL
G_DAC
IIC_SDA
R_DAC
+12V
B_DAC
ABL_DAC
OSD_HS
TNPA0862X



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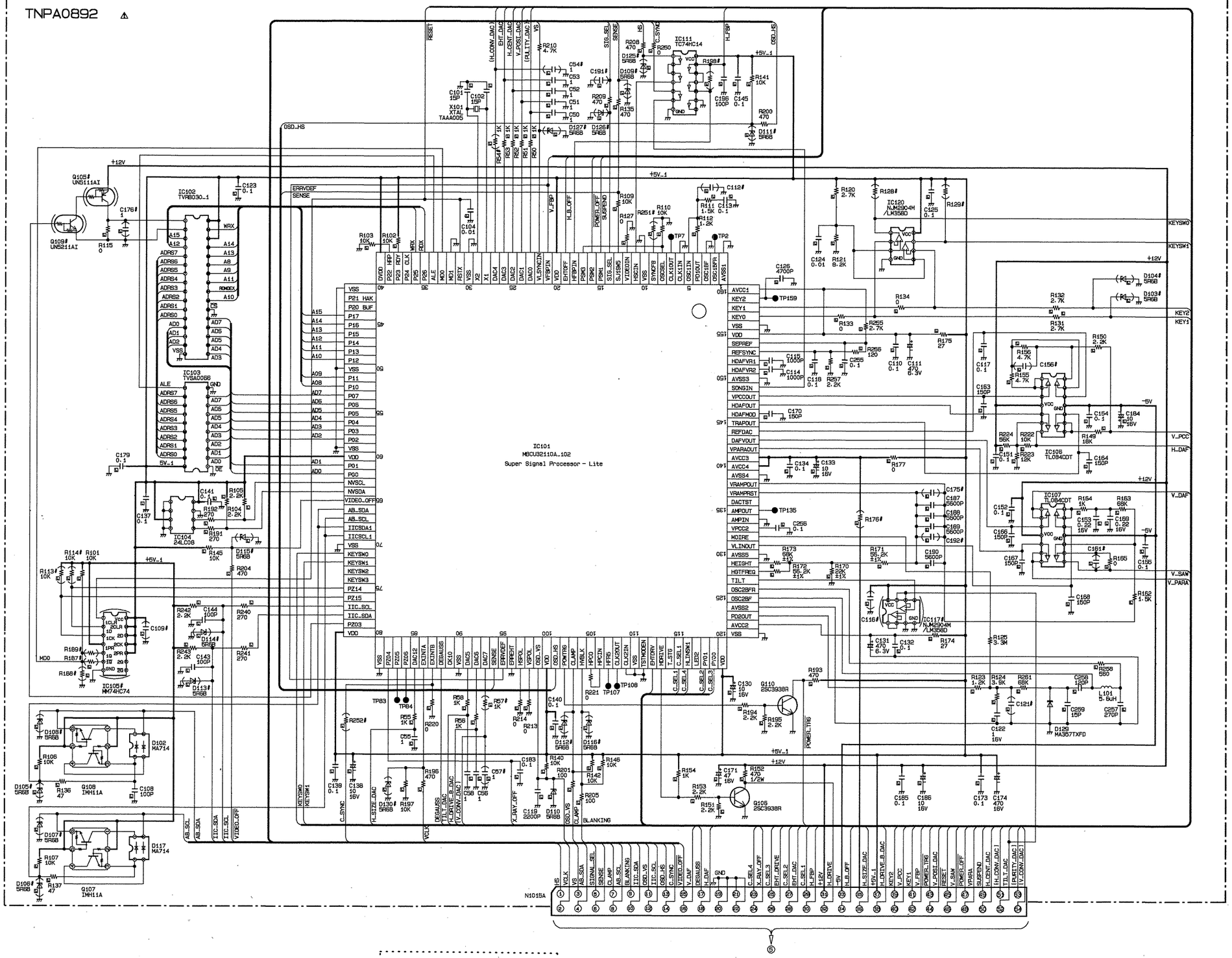

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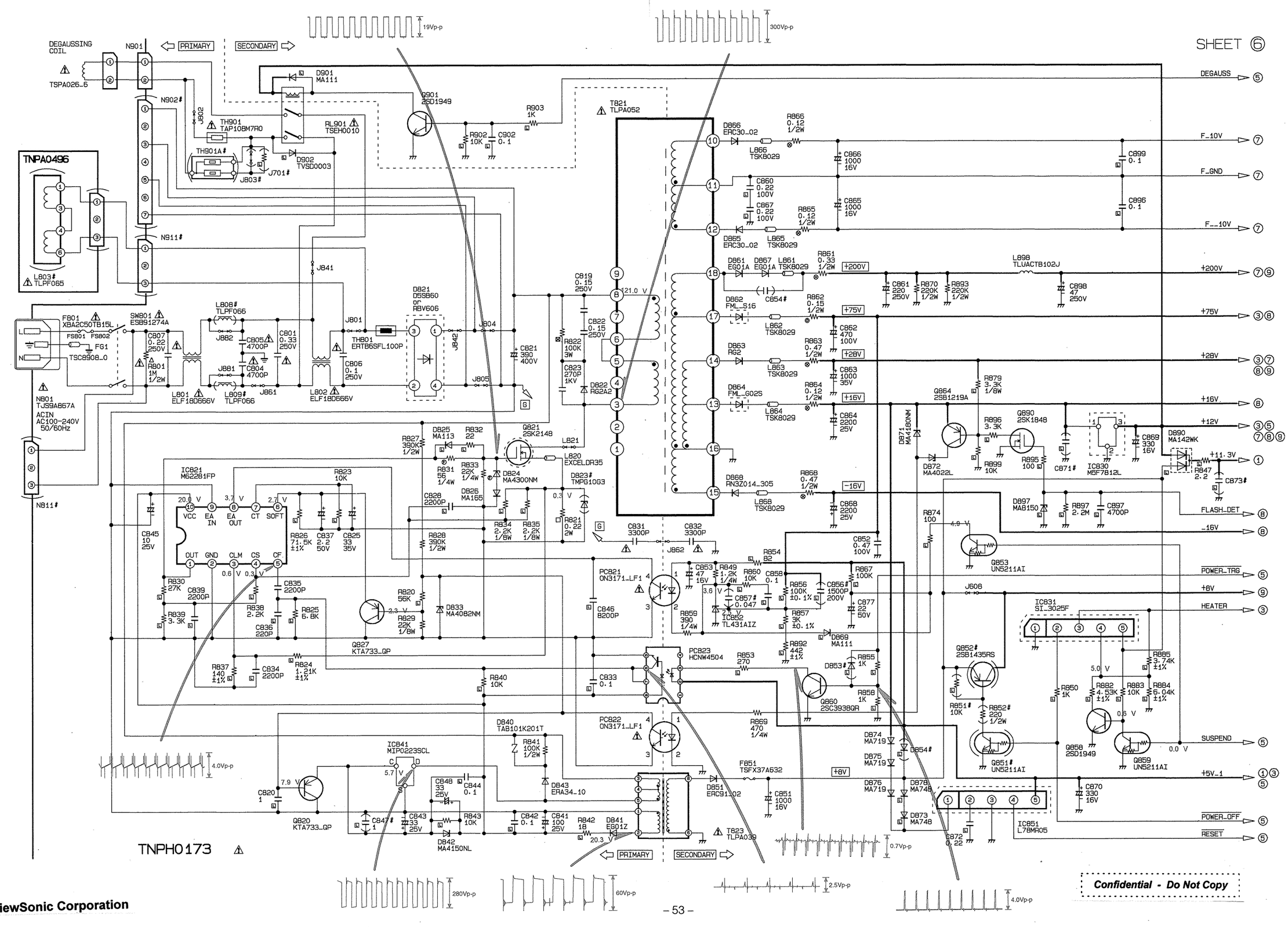
SHEET ⑤

N1015B

TNPA0862Z ⚠

TNPH0173 ⚠


DEGAUSSING COIL
TSPA026-6
N901
PRIMARY
SECONDARY
19Vp-p
300Vp-p
D901 MA111
Q901 2SD1949
R903 1K
R902 10K
C902 0.1
T821 TLPA052
TNPA0496
L803# TLPF065
N902#
N911#
J502
TH901 TAP10BM7R0
TH901A#
J803#
J701#
RL901 TSEH0010
D902 TVSD0003
J841
F801 XBA2C50TB15L
FS801 FS802
FG1
TSC8908-0
SW801 ESB91274A
C807 0.22 250V
RB01 1M 1/2W
L808# TLPF066
J882
C805 4700P
C801 0.33 250V
J881
C804 4700P
L801 ELF18D666V
L809# TLPF066
J861
L802 ELF18D666V
J801
TH801 ERTB6SFL100P
C806 0.1 250V
D821 DESB60 OR RBV606
J842
J804
J805
C821 390 400V
N801 TJS9A867A
ACIN AC100-240V 50/60Hz
N811#
C819 0.15 250V
21.0 V
C822 0.15 250V
R822 100K 3W
C823 270P 1KV
D822 RG2A2
D866 ERC30-02
R866 0.12 1/2W
L866 TSK8029
C866 1000 16V
C860 0.22 100V
C867 0.22 100V
C865 1000 16V
C899 0.1
C896 0.1
D865 ERC30-02
R865 0.12 1/2W
L865 TSK8029
D861 EG01A
D867 EG01A
L861 TSK8029
R861 0.33 1/2W
+200V
C854#
L898 TLUACTB102J
C861 220 250V
R870 220K 1/2W
R893 220K 1/2W
C898 47 250V
D862 FML-S16
R862 0.15 1/2W
+75V
L862 TSK8029
C862 470 100V
D863 RG2
R863 0.47 1/2W
+28V
L863 TSK8029
C863 1000 35V
D864 FML-G02S
R864 0.12 1/2W
+16V
L864 TSK8029
C864 2200 25V
Q864 2SB1219A
R879 3.3K 1/8W
D871 MA4180NM
D872 MA4022L
R896 3.3K
R899 10K
Q890 2SK1848
R895 100
C871#
IC830 MSF7812L
C869 330 16V
D890 MA142WK
+11.3V
R847 2.2
C873#
D868 RN3Z014-305
R868 0.47 1/2W
-16V
L868 TSK8029
C868 2200 25V
D897 MA8150
R897 2.2M
C897 4700P
FLASH_DET
-16V
R874 100
4.9 V
Q853 UN5211AI
C852 0.47 100V
R854 82
C853 47 16V
R849 1.2K 1/4W
R860 10K
C858 0.1
R867 100K
PC821 ON3171-LF1
R856 100K ±0.1%
C856# 1500P 200V
3.6 V
C857# 0.047
2.5 V
IC832 TL431AIZ
R859 390 1/4W
R857 3K ±0.1%
C877 22 50V
POWER_TRG
J608
+8V
HEATER
IC831 SI-3025F
D869 MA111
R892 442 ±1%
C845 8200P
PC823 HCNW4504
R853 270
D853# R855 1K
Q852# 2SB1435RS
R885 3.74K ±1%
5.0 V
R850 1K
R882 4.53K ±1%
R883 10K
R884 6.04K ±1%
0.6 V
Q858 2SD1949
Q859 UN5211AI
SUSPEND
0.0 V
R858 1K
Q860 2SC3938QR
R851# 10K
R852# 220 1/2W
Q851# UN5211AI
C833 0.1
R840 10K
PC822 ON3171-LF1
R869 470 1/4W
D874 MA719
D875 MA719
D876 MA719
D878 MA748
D873 MA748
D854#
C870 330 16V
IC851 L78MR05
+5V-1
POWER_OFF
RESET
C872 0.22
D840 TAB101K201T
R841 100K 1/2W
D843 ERA34-10
IC841 MIP0223SCL
5.7 V
C848 33 25V
C844 0.1
C820 1
7.9 V
Q820 KTA733-GP
C847# 1
C843 33 25V
R843 10K
C842 0.1
C841 100 25V
R842 18
20.3 V
D841 EG01Z
D842 MA4150NL
F851 TSFX37A632
+8V
C851 1000 16V
D851 ERC91-02
T823 TLPA039
C831 3300P
C832 3300P
J862
R827 390K 1/2W
D825 MA113
R832 22
R831 56 1/4W
R833 22K 1/4W
Q821 2SK2148
L821
L820 EXCELDR35
D824 MA4300NM
D823# TMPG10G3
D826 MA165
C828 2200P
R834 2.2K 1/8W
R835 2.2K 1/8W
R821 0.22 2W
0.3 V
IC821 M62281FP
R823 10K
20.0 V
3.7 V
2.7 V
VCC EA IN EA OUT CT SOFT
OUT GND CLM CS CF
0.6 V 0.3 V
C845 10 25V
R826 71.5K ±1%
C837 2.2 50V
C825 33 35V
R828 390K 1/2W
R830 27K
C839 2200P
R839 3.3K
C835 2200P
R838 2.2K
R825 6.8K
C836 220P
R820 56K
R829 22K 1/8W
2.3 V
Q827 KTA733-GP
D833 MA4082NM
R837 140 ±1%
C834 2200P
R824 1.21K ±1%
4.0Vp-p
TNPH0173
280Vp-p
60Vp-p
0.7Vp-p
2.5Vp-p
4.0Vp-p
DEGAUSS
F_10V
F_GND
F__10V
+200V
+75V
+28V
+16V
+12V
+11.3V
FLASH_DET
-16V
POWER_TRG
+8V
HEATER
SUSPEND
+5V-1
POWER_OFF
RESET
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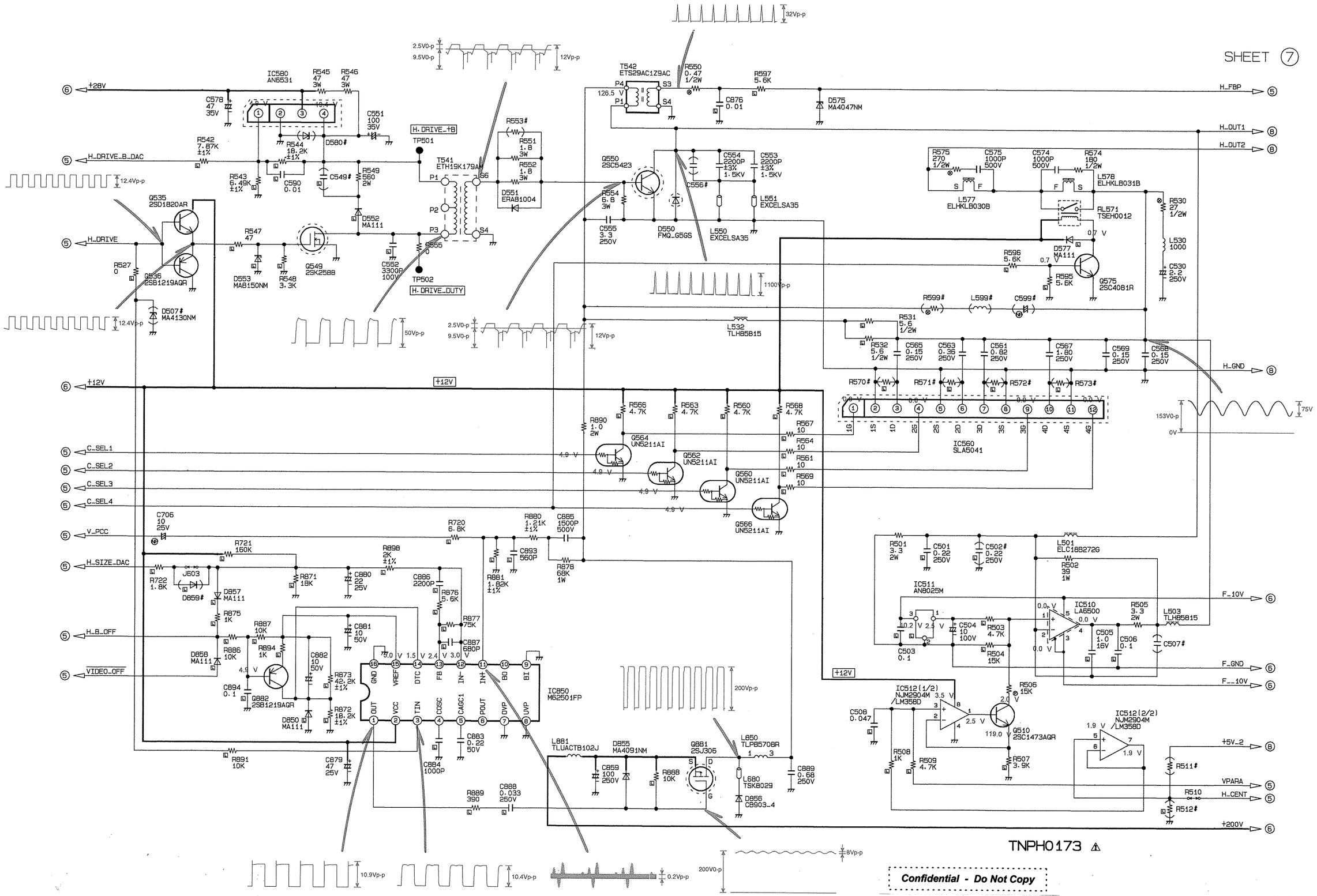
+28V
H_DRIVE_B_DAC
H_DRIVE
+12V
C_SEL1
C_SEL2
C_SEL3
C_SEL4
V_PCC
H_SIZE_DAC
H_B_OFF
VIDEO_OFF
IC580 AN6531
R545 47 3W
R546 47 3W
C578 47 35V
C551 100 35V
R542 7.87K ±1%
R544 18.2K ±1%
D580#
R543 6.49K ±1%
C590 0.01
C549#
R549 560 2W
D552 MA111
H_DRIVE_+B
TP501
T541 ETH19K179AM
R553#
R551 1.8 3W
R552 1.8 3W
D551 ERA81004
R547 47
D553 MA8150NM
R548 3.3K
Q549 2SK2588
C552 3300P 100V
R555 0
TP502
H_DRIVE_DUTY
Q535 2SD1820AR
Q536 2SB1219AQR
R527 0
D507# MA4130NM
T542 ETS29AC1Z9AC
R550 0.47 1/2W
R597 5.6K
C876 0.01
D575 MA4047NM
H_FBP
H_OUT1
H_OUT2
Q550 2SC5423
C554 2200P ±3% 1.5KV
C553 2200P ±3% 1.5KV
C556#
R554 6.8 3W
C555 3.3 250V
D550 FMQ_G5GS
L550 EXCELSA35
L551 EXCELSA35
R575 270 1/2W
C575 1000P 500V
C574 1000P 500V
R574 180 1/2W
L578 ELHKLB031B
L577 ELHKLB030B
RL571 TSEH0012
R530 27 1/2W
L530 1000
C530 2.2 250V
D577 MA111
R596 5.6K
R595 5.6K
Q575 2SC4081R
R599# L599# C599#
L532 TLH85B15
R531 5.6 1/2W
R532 5.6 1/2W
C565 0.15 250V
C563 0.35 250V
C561 0.82 250V
C567 1.80 250V
C569 0.15 250V
C568 0.15 250V
H_GND
R570# R571# R572# R573#
IC560 SLA5041
R566 4.7K
R563 4.7K
R560 4.7K
R568 4.7K
R890 1.0 2W
R567 10
R564 10
R561 10
R569 10
Q564 UN5211AI
Q562 UN5211AI
Q560 UN5211AI
Q566 UN5211AI
C706 10 25V
R721 160K
R722 1.8K
J603
D859#
D857 MA111
R720 6.8K
R880 1.21K ±1%
C885 1500P 500V
C893 560P
R878 68K 1W
R881 1.82K ±1%
R898 2K ±1%
C886 2200P
R876 5.6K
R877 75K
C887 680P
R871 18K
C880 22 25V
C881 10 50V
R875 1K
R887 10K
R886 10K
D858 MA111
R894 1K
C882 10 50V
C894 0.1
Q882 2SB1219AQR
R873 42.2K ±1%
R872 18.2K ±1%
D850 MA111
R891 10K
C879 47 25V
C884 1000P
IC850 M62501FP
OUT VCC TIN COSC CAGC1 POUT OVP UVP
GND VREF DTC FB IN- IN+ BD BI
C883 0.22 50V
L881 TLUACTB102J
C859 100 250V
D855 MA4091NM
R888 10K
Q881 2SJ306
L850 TLP85708R
C889 0.68 250V
D856 CB903-4
R889 390
C888 0.033 250V
R501 3.3 2W
C501 0.22 250V
C502# 0.22 250V
L501 ELC18B272G
R502 39 1W
IC511 AN8025M
C503 0.1
C504 10 100V
R503 4.7K
R504 15K
IC510 LA6500
C505 1.0 16V
C506 0.1
R505 3.3 2W
L503 TLH85B15
C507#
F_10V
F_GND
F_-10V
IC512(1/2) NJM2904M /LM358D
C508 0.047
R506 15K
Q510 2SC1473AQR
R508 1K
R509 4.7K
R507 3.9K
IC512(2/2) NJM2904M /LM358D
+5V_2
R511#
VPARA
H_CENT
R510
R512#
+200V
TNPH0173 ⚠
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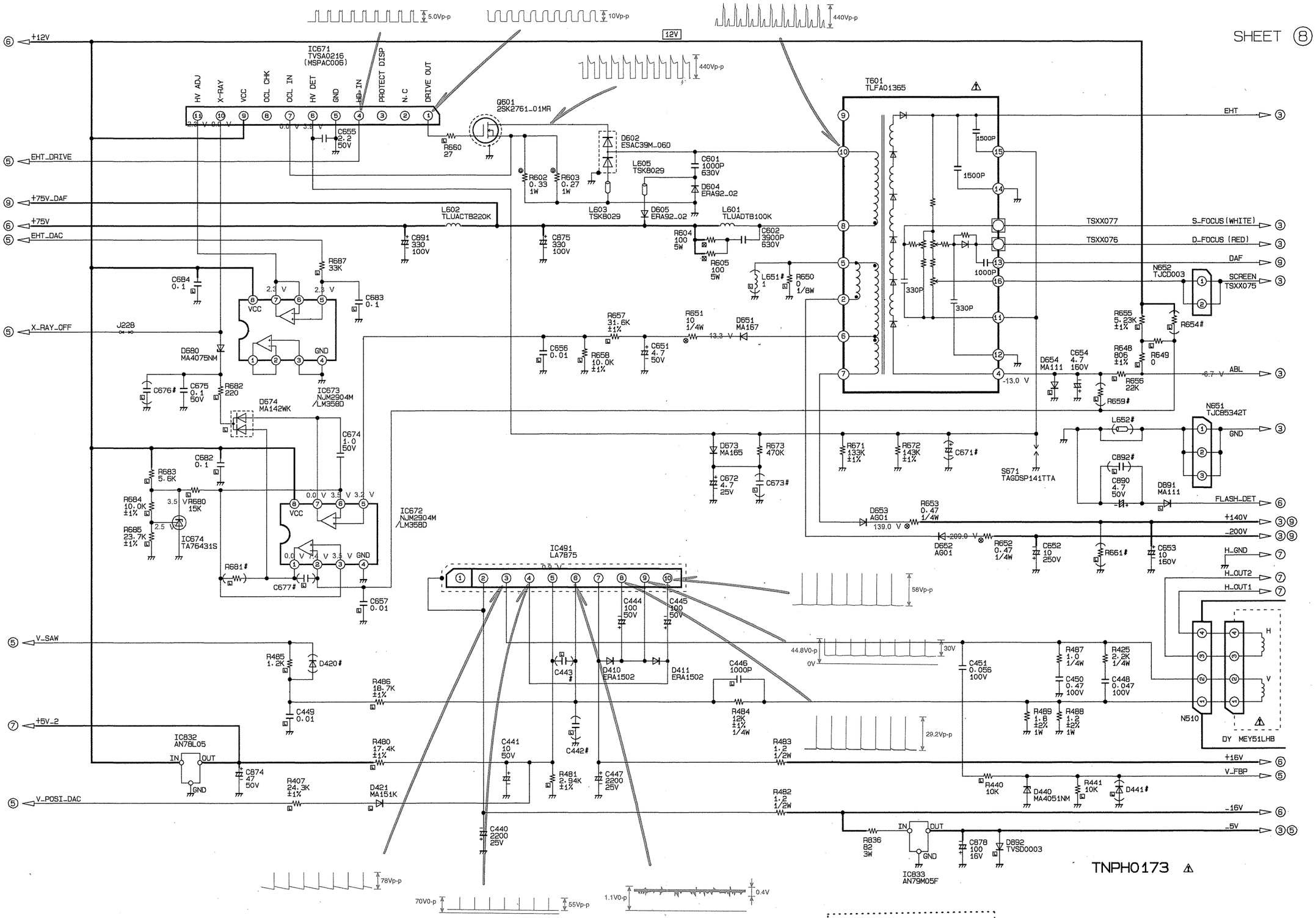

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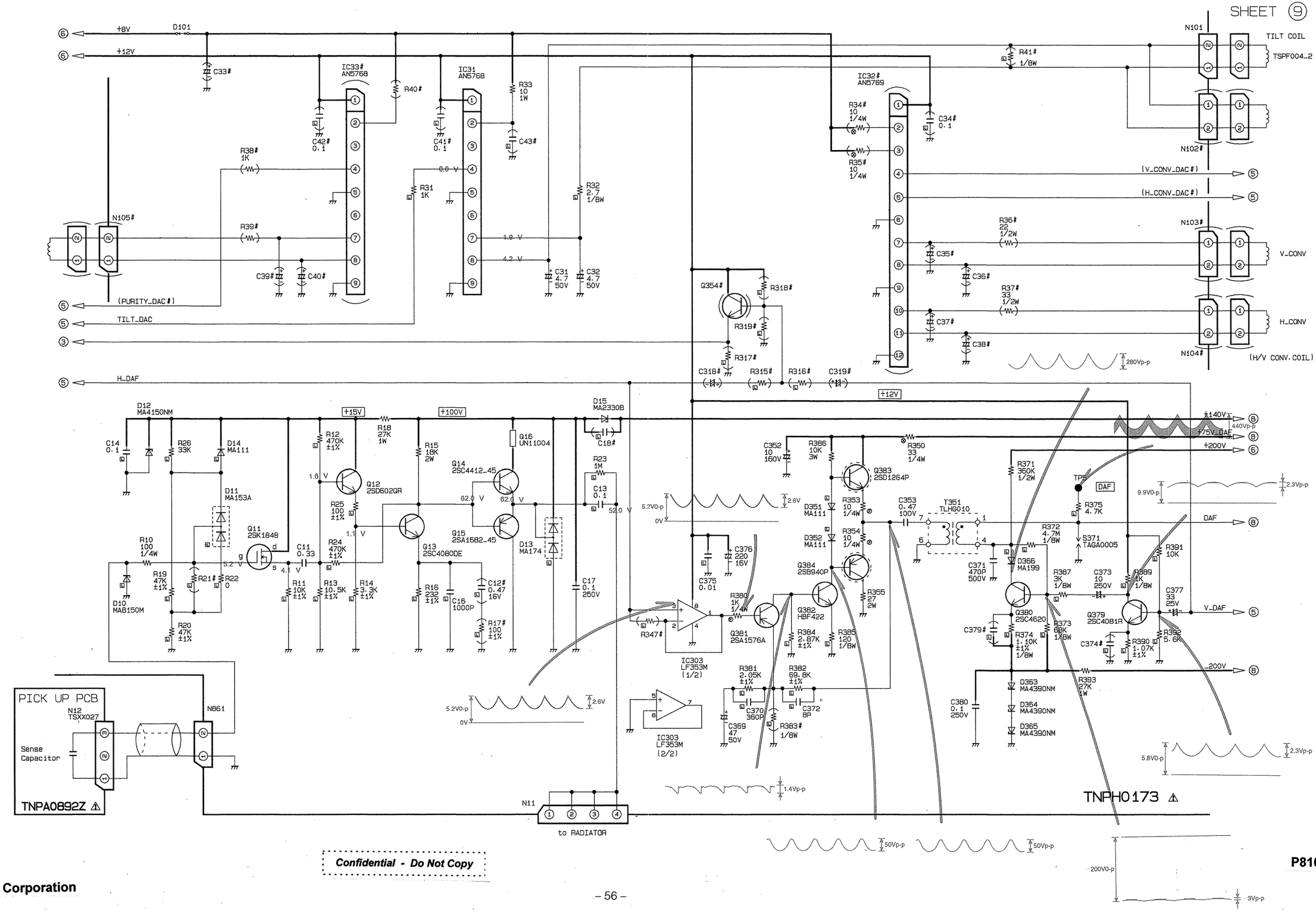

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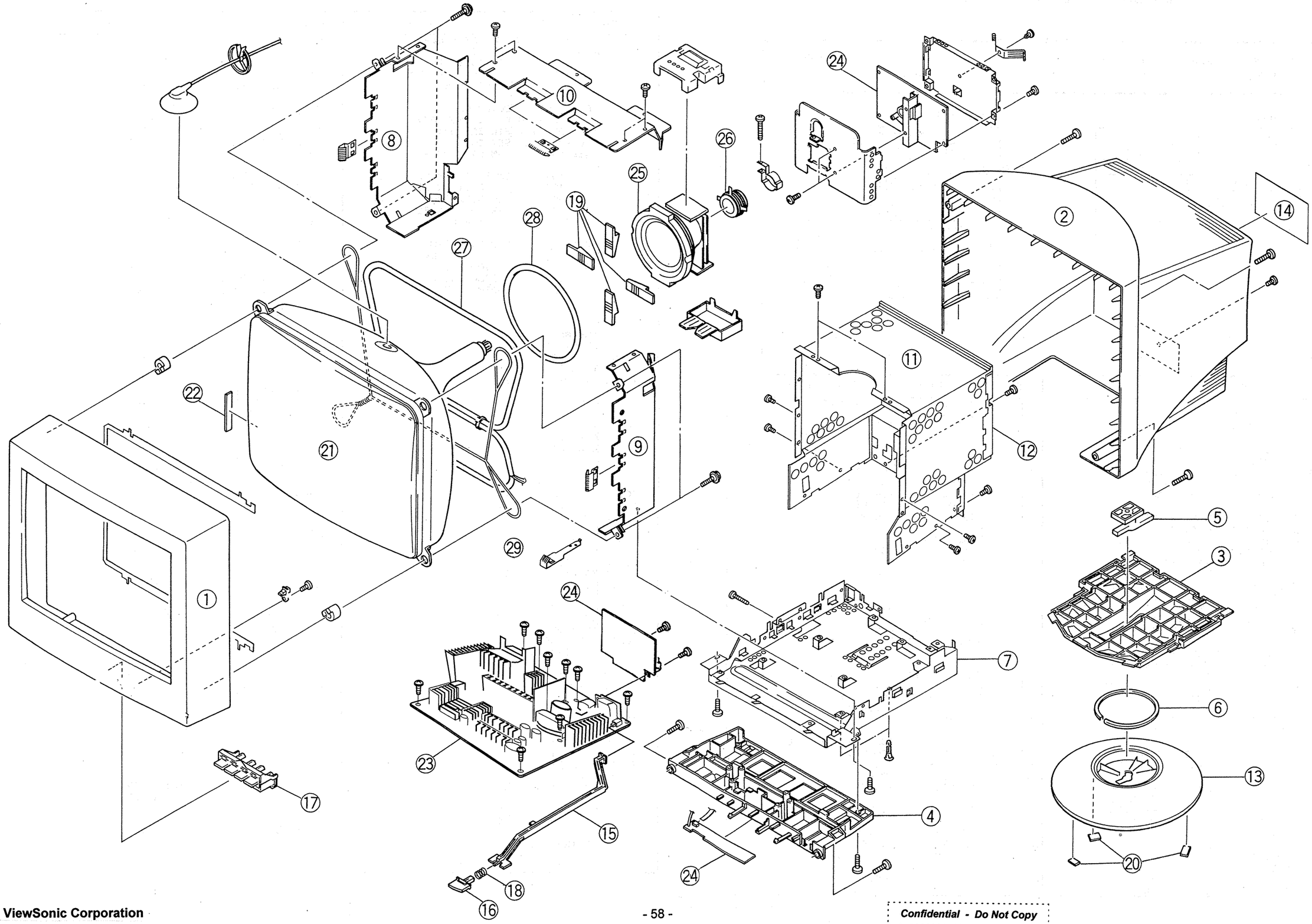
EXPLODED VIEW



REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by the International symbol ⚠ have special characteristics important for safety.
When replacing any of these components use only manufacture's specified parts.

RESISTOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Carbon	F	± 1%
F	Fuse	J	± 5%
M	Metal Oxide	K	± 10%
S	Solid	M	± 20%
W	Wire Wound	G	± 2%

Example: Part No. ERD25TJ104 (C) Description 100K (J) 1/4W

CAPACITOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Ceramic	C	± 0.25pF
E	Electrolytic	D	± 0.5pF
P	Polyester	F	± 1pF
S	Styrol	J	± 5%
T	Tantalum	K	± 10%
PP	Polypropylene	L	± 15%
		M	± 20%
		P	+100% - 0%
		Z	+80% - 20%

Example: Part No. ECKF1H103ZF (C) Description 0.01μF (Z) 50V

	Ref.No.	Part No.	Description
		CABINET & MAIN PARTS	
⚠	1	TTYA04402-3	ESCUTCHEON
⚠	2	TKUC01239	REAR COVER
⚠	3	TKSG001-A06	BOTTOM CABINET
⚠	4	TKSG004-B02	BASE CABINET
⚠		TKKC5060	LED GUIDE
⚠	5	TKKX5010-1	CENTER POST
	6	TKKX5011-1	SPACER RING
⚠		TKK859745-9	CONNECTOR COVER
	7	TUAA06401-1	BOTTOM PLATE
		TSAA3004	RADIATOR
	8	TUCC5083-1	SHIELD CASE(CRT)R
	9	TUCC5084-1	SHIELD CASE(CRT)L
	10	TUCC5085-1	SHIELD CASE BRACKET
	11	TUCC5115	SHIELD CASE
	12	TUCC5116-2	SHIELD CASE(REAR)
⚠	13	TBLB3002-A06	PEDESTAL
⚠	14	TBMD023	MODEL NAME LABEL
⚠	15	TBXA04401	POWER SWITCH SHAFT
⚠	16	TBXA04801	KNOB(POWER SWITCH)
⚠	17	TBXA15601	KNOB(CONTROL)
		TESA012	SPRING(CRT EARTH)
		TESA046	SPRING(CRT EARTH,BOTTOM)
		TESH017	FBT SPRING
		TES8586	EARTH SPRING
	18	TES9294	SPRING(POWER SWITCH)
⚠		TMME023	TILT COIL CLAMPER(BIG)
⚠		TMME035	DEGAUSS COIL CLAMPER,SIDE
⚠		TMME052	LEAD CLAMPER(SMALL)
⚠		TMME067	DEGAUSS COIL CLAMPER
⚠		TMM15404-1	SPACER RING
⚠		TMM16452	TILT COIL CLAMPER
⚠		TMM6463	CLAMPER
⚠		TMM81499	PUSH RIVET
		TMM85576-1	CRT RUBBER
⚠	19	TMM85586	RUBBER(WEDGE)
⚠		TMX13418	PCB SPACER
⚠		TMKG035	SPONGE
⚠		TMKG067	RUBBER CUSHION(BIG)
⚠	20	TMK84990	SET LEG
⚠		TMK85572	FERRITE STICK
		TQFX040	CONDUCTIVE SHEET
		THT1028	SCREW(FOR CRT)
		THT1069	SCREW(FOR SHIELD CASE)
		XTB4+12J	SCREW
		XTN5+16LY	SCREW
		XTV3+10A	SCREW
		XTV3+20J	SCREW
		XTV3+8A	SCREW
		XYA4+EF8	SCREW
		XYA4+EJ10	SCREW
		XYE3+EJ10	SCREW
⚠		M51KYY540X	COLOR PICTURE TUBE
	22	TNPA0892-22	PC BOARD W/COMPONENT (SSP/TCO)
⚠	23	TNPH0173-22	PC BOARD W/COMPONENT (MAIN)
	24	TXANP31F63NM	PC BOARD W/COMPONENT (VIDEO INPUT/CRT/KBD)
⚠	25	MEY51LHB4	DEFLECTION YOKE
⚠	26	TLCB006-1	CONVERGENCE COIL
⚠	27	TSPA026-6	DEGAUSS COIL
⚠	28	TSPF004-2	TILT COIL
⚠		TSXA023	POWER CORD<-M>
⚠		TSXA076	POWER CORD<-E>
		TSXF051-1	SIGNAL CORD
		TSXL030	FLAT CORD(5P)
⚠		TSXL055	FLAT CORD(20P)
⚠		TSXX075	SCREEN LEAD(RED)
⚠		TSXX076	FOCUS LEAD(RED)
⚠		TSXX077	FOCUS LEAD(WHITE)
⚠		TSXX053	4P CONNECTOR ASSY

	Ref.No.	Part No.	Description
!		TXA3A11F63NM	CRT EARTH LEAD
		TSMA003	MAGNET
		T4F31519Q	POLYESTER TAPE(50M)
		T4F72425Q	COTTON TAPE(55M)
		T4F90240	MAIRA TAPE
		TPCA49902	OUTER CARTON
		TXAPD2D2171B	FILLER(BOTTOM)
		TXAPD2D2171T	FILLER(TOP)
		TPE894011-2	SET COVER
		TQE8513-2	FUN BAG COVER
		TQBE0151	INSTRUCTION BOOK(TC095)
⚠		TQBE0191	INSTRUCTION BOOK
		TQDE14010	REGISTRATION CARD<-M>
		TQFA343	BAR CODE LABEL
		TQFA360	WARNING LABEL
		TQFA532	PTB LABEL(INNER)
		TQF83825-6	SERIAL NO. LABEL
		TQF85363-1	CARTON LABEL<-M>
		TQF85363-8	CARTON LABEL<-E>
⚠		TQF86608	EARTH CAUTION LABEL
		I.C	
	IC31	AN5768	IC
	IC101	CU32110A-102	IC
	IC102	TVRB033-1	IC
	IC103	TVSA0066	IC
	IC104	24LC08BTISN	IC
	IC106	LF347MX	IC
	IC107	LF347MX	IC
	IC111	TC74HC14AF	IC
	IC120	NJM2904M	IC
	IC303	LF353MX	IC
	IC491	LA7875	IC
	IC510	LA6500-FA	IC
	IC511	AN8025M	IC
	IC512	NJM2904M	IC
	IC580	AN6531	IC
	IC671	TVSA0216	IC
	IC672	NJM2904M	IC
	IC673	NJM2904M	IC
	IC674	TA76431S	IC
	IC821	M62281FP	IC
	IC830	M5F7812L	IC
	IC831	SI-3025F	HYBRID IC
	IC832	AN78L05	IC
	IC833	AN79M05F	IC
	IC841	MIP0223SCL	IC
	IC850	M62501FP	IC
	IC851	L78MR05	IC
	IC852	TL431AIZ	IC
	IC1301	M52741SP700	IC
⚠	IC1302	VP3628	HYBRID IC
	IC1303	STK190-110	HYBRID IC
	IC1305	TA76431S	IC
	IC1306	L78M09T	IC
	IC1321	NJM2904M	IC
	IC1331	MM74HCT00MX	IC
	IC1381	NJM2904M	IC
	IC1401	LSC4385DW2	IC
		TRANSISTORS	
	IC560	SLA5041	TRANSISTOR

	Ref.No.	Part No.	Description
	Q11	2SK1848	TRANSISTOR
	Q12	2SD602R	TRANSISTOR
	Q13	2SC4080DETD	TRANSISTOR
	Q14	2SC4412-45	TRANSISTOR
	Q15	2SA1682-45	TRANSISTOR
	Q106	2SC3938R	TRANSISTOR
	Q107	IMH11A	TRANSISTOR
	Q108	IMH11A	TRANSISTOR
	Q110	2SC3938R	TRANSISTOR
	Q280	2SA1739R	TRANSISTOR
	Q286	2SC3938R	TRANSISTOR
	Q379	2SC4081R	TRANSISTOR
	Q380	2SC4620V25	TRANSISTOR
	Q381	2SA1576A	TRANSISTOR
	Q382	2SC1473AR	TRANSISTOR
	Q383	2SD1264PLB	TRANSISTOR
	Q384	2SB940PLB	TRANSISTOR
	Q510	2SC1473AR	TRANSISTOR
	Q535	2SD1820AR	TRANSISTOR
	Q536	2SB1219AQ	TRANSISTOR
	Q549	2SK2588	TRANSISTOR
	Q550	2SC5423002FD	TRANSISTOR
	Q560	UN5211AI	TRANSISTOR
	Q562	UN5211AI	TRANSISTOR
	Q564	UN5211AI	TRANSISTOR
	Q566	UN5211AI	TRANSISTOR
	Q575	2SC4081R	TRANSISTOR
	Q601	2SK2761-01MR	TRANSISTOR
	Q820	2SA733Q	TRANSISTOR
	Q821	2SK2148	TRANSISTOR
	Q827	2SA733Q	TRANSISTOR
	Q853	UN5211AI	TRANSISTOR
	Q858	2SD1949Q	TRANSISTOR
	Q859	UN5211AI	TRANSISTOR
	Q860	2SC3938R	TRANSISTOR
	Q864	2SB1219AQ	TRANSISTOR
	Q881	2SJ306MRB	TRANSISTOR
	Q882	2SB1219AQ	TRANSISTOR
	Q890	2SK1848	TRANSISTOR
	Q901	2SD1949Q	TRANSISTOR
	Q902	UN5111AI	TRANSISTOR
	Q903	UN5211AI	TRANSISTOR
	Q1001	2SC4270	TRANSISTOR
	Q1002	2SC4270	TRANSISTOR
	Q1030	2SC4270	TRANSISTOR
	Q1031	2SC4270	TRANSISTOR
	Q1032	2SA1764	TRANSISTOR
	Q1065	2SC4412-45	TRANSISTOR
	Q1101	2SC4270	TRANSISTOR
	Q1102	2SC4270	TRANSISTOR
	Q1130	2SC4270	TRANSISTOR
	Q1131	2SC4270	TRANSISTOR
	Q1132	2SA1764	TRANSISTOR
	Q1165	2SC4412-45	TRANSISTOR
	Q1201	2SC4270	TRANSISTOR
	Q1202	2SC4270	TRANSISTOR
	Q1230	2SC4270	TRANSISTOR
	Q1231	2SC4270	TRANSISTOR
	Q1232	2SA1764	TRANSISTOR
	Q1265	2SC4412-45	TRANSISTOR
	Q1301	2SA1576A	TRANSISTOR
	Q1302	2SA1576A	TRANSISTOR

Ref.No.	Part No.	Description
Q1303	UN5211AI	TRANSISTOR
Q1304	UN5211AI	TRANSISTOR
Q1345	UN5111AI	TRANSISTOR
Q1346	2SA1739R	TRANSISTOR
Q1370	2SC3938R	TRANSISTOR
Q1371	2SC3757Q	TRANSISTOR
Q1380	2SA1576A	TRANSISTOR
Q1381	UN5211AI	TRANSISTOR
Q1382	2SA1767Q	TRANSISTOR
Q1383	2SD1819AQ	TRANSISTOR
	DIODES	
D10	MA8150M	DIODE
D11	MA153A	DIODE
D12	MA4150NM	DIODE
D13	MA174	DIODE
D14	MA111	DIODE
D15	MA2330B	DIODE
D102	MA714	DIODE
D110	DTZTT115R6B	DIODE
D117	MA714	DIODE
D129	MA357	DIODE
D201	MA8056M	DIODE
D202	MA8056M	DIODE
D211	MA8056M	DIODE
D212	MA8056M	DIODE
D251	MA8056M	DIODE
D252	MA8056M	DIODE
D351	MA111	DIODE
D352	MA111	DIODE
D363	MA4390NM	DIODE
D364	MA4390NM	DIODE
D365	MA4390NM	DIODE
D366	MA199	DIODE
D410	ERA1502	DIODE
D411	ERA1502	DIODE
D421	MA151K	DIODE
D440	MA4051NM	DIODE
D550	FMQ-G5GSLF	DIODE
D551	ERA81004	DIODE
D552	MA111	DIODE
D553	MA8150M	DIODE
D575	MA4047NM	DIODE
D577	MA111	DIODE
D602	ESAC39M-06D	DIODE
D604	ERA92-02	DIODE
D605	ERA92-02	DIODE
D651	MA167	DIODE
D652	TVSAG01	DIODE
D653	TVSAG01	DIODE
D654	MA111	DIODE
D673	MA165	DIODE
D674	MA142WK	DIODE
D680	MA4075NM	DIODE
D821	RBV606	DIODE
D822	RG2A2	DIODE
D824	MA4300NM	DIODE
D825	MA113	DIODE
D826	MA165	DIODE
D833	MA4082NM	DIODE
D840	TAB101K201T	VARISTOR
D841	EG01Z	DIODE

Ref.No.	Part No.	Description
D842	MA4150NL	DIODE
D843	ERA34-10	DIODE
D850	MA111	DIODE
D851	ERC91-02	DIODE
D855	MA4091NM	DIODE
D856	CB903-4	DIODE
D857	MA111	DIODE
D858	MA111	DIODE
D861	EG01A	DIODE
D862	FML-S16S	DIODE
D863	TVSRG2	DIODE
D864	FML-G02S	DIODE
D865	ERC30-02	DIODE
D866	ERC30-02	DIODE
D867	EG01A	DIODE
D868	RN3Z014-305	DIODE
D869	MA111	DIODE
D871	MA4180NM	DIODE
D872	MA4022L	DIODE
D873	MA748	DIODE
D874	MA719	DIODE
D875	MA719	DIODE
D876	MA719	DIODE
D878	MA748	DIODE
D890	MA142WK	DIODE
D891	MA111	DIODE
D892	TVSD0003	DIODE
D897	MA8150M	DIODE
D901	MA111	DIODE
D902	TVSD0003	DIODE
D953	MA4056NM	DIODE
D978	MA4056NM	DIODE
D979	MA4056NM	DIODE
D990	SML1816W	DIODE(LED)
D993	MA8056H	DIODE
D994	MA8056H	DIODE
D995	MA8056H	DIODE
D996	MA8056H	DIODE
D1001	MA111	DIODE
D1002	MA111	DIODE
D1003	MA111	DIODE
D1011	MA111	DIODE
D1012	MA111	DIODE
D1013	MA111	DIODE
D1020	MA111	DIODE
D1021	MA111	DIODE
D1030	DCC010	DIODE
D1051	MA2Z001	DIODE
D1052	MA2Z001	DIODE
D1065	MA167A	DIODE
D1101	MA111	DIODE
D1102	MA111	DIODE
D1103	MA111	DIODE
D1111	MA111	DIODE
D1112	MA111	DIODE
D1113	MA111	DIODE
D1120	MA111	DIODE
D1121	MA111	DIODE
D1130	DCC010	DIODE
D1151	MA2Z001	DIODE
D1152	MA2Z001	DIODE
D1165	MA167A	DIODE

	Ref.No.	Part No.	Description
	D1201	MA111	DIODE
	D1202	MA111	DIODE
	D1203	MA111	DIODE
	D1211	MA111	DIODE
	D1212	MA111	DIODE
	D1213	MA111	DIODE
	D1220	MA111	DIODE
	D1221	MA111	DIODE
	D1230	DCC010	DIODE
	D1251	MA2Z001	DIODE
	D1252	MA2Z001	DIODE
	D1265	MA167A	DIODE
	D1301	MA142WA	DIODE
	D1302	MA142WA	DIODE
	D1324	MA4056NM	DIODE
	D1325	MA188	DIODE
	D1326	MA111	DIODE
	D1331	MA111	DIODE
	D1340	MA4051NM	DIODE
	D1341	MA4051NM	DIODE
	D1342	MA4051NM	DIODE
	D1343	MA4051NM	DIODE
	D1344	MA4051NM	DIODE
	D1345	MA4051NM	DIODE
	D1346	MA4051NM	DIODE
	D1347	MA8330M	DIODE
	D1348	MA111	DIODE
	D1349	MA8330M	DIODE
	D1371	MA111	DIODE
	D1381	MA111	DIODE
	D1382	EU02Z	DIODE
	D1383	MA8100L	DIODE
		COIL & TRANSFORMERS	
	L101	ELJFA5R6JB	CHIP COIL
⚠	L501	ELC18B272G	CHOKE COIL
	L503	TLH85815T	COIL
	L530	ELEY102KA	PEAKING COIL
	L532	TLH85815T	COIL
	L550	EXCELSA35T	LC COMBINATION
	L551	EXCELSA35T	LC COMBINATION
⚠	L577	ELHKLB030B	COIL
⚠	L578	ELHKLB031B	COIL
	L601	TLUADTB100K	PEAKING COIL
	L602	TLUACNB220K	PEAKING COIL
	L603	TSK8029	FERRITE CORE
	L605	TSK8029	FERRITE CORE
	L680	TSK8029	FERRITE CORE
⚠	L801	ELF18D666V	LINE FILTER
⚠	L802	ELF18D666V	LINE FILTER
	L820	EXCELDR35C	LC COMBINATION
⚠	L850	TLP85708R	CHOKE COIL
	L861	TSK8029	FERRITE CORE
	L862	TSK8029	FERRITE CORE
	L863	TSK8029	FERRITE CORE
	L864	TSK8029	FERRITE CORE
	L865	TSK8029	FERRITE CORE
	L866	TSK8029	FERRITE CORE
	L868	TSK8029	FERRITE CORE
	L881	TLUACNB102J	PEAKING COIL
	L898	TLUACNB102J	PEAKING COIL

	Ref.No.	Part No.	Description
	L1320	EXCELDR35C	LC COMBINATION
	L1321	TSKA092	FERRITE CORE
	L1322	TSKA092	FERRITE CORE
	L1323	TSKA092	FERRITE CORE
	L1324	TSKA092	FERRITE CORE
	L1327	ELESN221KA	PEAKING COIL
	L1340	EXCELDR35C	LC COMBINATION
	L1341	EXCELDR35C	LC COMBINATION
	L1351	EXCELDR35C	LC COMBINATION
	L1352	EXCELDR35C	LC COMBINATION
	L1354	EXCELDR35C	LC COMBINATION
	L1401	ELEXH151KA	PEAKING COIL
⚠	T351	TLHG010	D.A.F. TRANSFORMER
⚠	T541	ETH19K179AM	H.DRIVE TRANSFORMER
⚠	T542	ETS29AC1Z9AC	TRANSFORMER
⚠	T601	TLFA01365	FLYBACK TRANSFORMER
⚠	T821	TLPA052	POWER TRANSFORMER
⚠	T823	TLPA039	POWER TRANSFORMER(SUB)
		CAPACITORS	
	C11	ECQV1H334JL	P 0.33UF J 50V
	C13	ECJ2VF1H104Z	C 0.1UF Z 50V
	C14	ECJ2VF1H104Z	C 0.1UF Z 50V
	C16	ECUX1H102JCX	C 1000PF J 50V
	C17	ECQE2104KF	P 0.1UF K 200V
	C31	ECEA1HGE4R7	E 4.7UF 50V
	C32	ECEA1HGE4R7	E 4.7UF 50V
	C50	ECJ2VF1C105Z	C 1UF Z 16V
	C51	ECJ2VF1C105Z	C 1UF Z 16V
	C52	ECJ2VF1C105Z	C 1UF Z 16V
	C53	ECJ2VF1C105Z	C 1UF Z 16V
	C55	ECJ2VF1C105Z	C 1UF Z 16V
	C56	ECJ2VF1C105Z	C 1UF Z 16V
	C58	ECJ2VF1C105Z	C 1UF Z 16V
	C101	ECUX1H150JCN	C 15PF J 50V
	C102	ECUX1H150JCN	C 15PF J 50V
	C104	ECUX1H103KBG	C 0.01UF K 50V
	C108	ECUX1H101JCG	C 100PF J 50V
	C110	ECJ2VF1H104Z	C 0.1UF Z 50V
	C111	ECAOJHG471	E 470UF 6.3V
	C113	ECUX1C104KBX	C 0.1UF K 16V
	C114	ECUX1H102KBN	C 1000PF K 50V
	C115	ECUX1H102KBN	C 1000PF K 50V
	C117	ECJ2VF1H104Z	C 0.1UF Z 50V
	C118	ECJ2VF1H104Z	C 0.1UF Z 50V
	C119	ECUX1H222JCX	C 2200PF J 50V
	C122	ECUX1C105KBW	C 1UF K 16V
	C123	ECJ2VF1H104Z	C 0.1UF Z 50V
	C124	ECUX1H103KBG	C 0.01UF K 50V
	C125	ECJ2VF1H104Z	C 0.1UF Z 50V
	C126	ECUX1H472KBG	C 4700PF K 50V
	C130	ECEV1CG100G	E 10UF 16V
	C131	ECAOJHG471	E 470UF 6.3V
	C132	ECJ2VF1H104Z	C 0.1UF Z 50V
	C133	ECEV1CG100G	E 10UF 16V
	C134	ECJ2VF1H104Z	C 0.1UF Z 50V
	C137	ECJ2VF1H104Z	C 0.1UF Z 50V
	C138	ECEV1CG100G	E 10UF 16V
	C139	ECJ2VF1H104Z	C 0.1UF Z 50V
	C140	ECJ2VF1H104Z	C 0.1UF Z 50V
	C141	ECJ2VF1H104Z	C 0.1UF Z 50V
	C143	ECUX1H101JCG	C 100PF J 50V

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C144	ECUX1H101JCG	C	100PF	J	50V	C551	ECA1VHG101	E	100UF		35V
C145	ECJ2VF1H104Z	C	0.1UF	Z	50V	C552	TACBN2A332KT	C	3300PF	K	100V
C151	ECJ2VF1H104Z	C	0.1UF	Z	50V	C553	ECWH20222HV	PP	2200PF	H	1.5KV
C152	ECJ2VF1H104Z	C	0.1UF	Z	50V	C554	ECWH20222HV	PP	2200PF	H	1.5KV
C153	ECUX1C224KBX	C	0.22UF	K	16V	C555	ECQE2335KF	P	3.3UF	K	200V
C154	ECJ2VF1H104Z	C	0.1UF	Z	50V	C561	ECWF2824HBB	PP	0.82UF	H	200V
C155	ECJ2VF1H104Z	C	0.1UF	Z	50V	C563	ECWF2364HBB	PP	0.36UF	H	200V
C163	ECUX1H151JCG	C	150PF	J	50V	C565	ECWF2154HBB	PP	0.15UF	H	200V
C164	ECUX1H151JCG	C	150PF	J	50V	C567	ECWF2185HBB	PP	1.8UF	H	200V
C166	ECUX1H151JCG	C	150PF	J	50V	C568	ECWF2154HBB	PP	0.15UF	H	200V
C167	ECUX1H151JCG	C	150PF	J	50V	C569	ECWF2154HBB	PP	0.15UF	H	200V
C168	ECUX1H151JCG	C	150PF	J	50V	C574	ECKD2H102KB5	C	1000PF	K	500V
C169	ECUX1C224KBX	C	0.22UF	K	16V	C575	ECKD2H102KB5	C	1000PF	K	500V
C170	ECUX1H151JCG	C	150PF	J	50V	C578	ECA1VHG470	E	47UF		35V
C171	ECEV1CG470G	E	47UF		16V	C590	ECUX1H103KBG	C	0.01UF	K	50V
C173	ECJ2VF1H104Z	C	0.1UF	Z	50V	C601	ECQF6102JZ	PP	1000PF	J	600V
C174	ECA1CHG471	E	470UF		16V	C602	ECQF6392JZ	PP	3900PF	J	600V
C179	ECJ2VF1H104Z	C	0.1UF	Z	50V	C651	ECEA1HGE4R7	E	4.7UF		50V
C183	ECJ2VF1H104Z	C	0.1UF	Z	50V	C652	ECA2EHG100	E	10UF		250V
C184	ECEV1CG100G	E	10UF		16V	C653	ECA2CHG100	E	10UF		160V
C185	ECJ2VF1H104Z	C	0.1UF	Z	50V	C654	ECA2CHG4R7	E	4.7UF		160V
C186	ECEV1CG100G	E	10UF		16V	C655	ECQV1H225JL	P	2.2UF	J	50V
C187	ECUX1H562JCW	C	5600PF	J	50V	C656	ECUX1H103KBG	C	0.01UF	K	50V
C188	ECUX1H562JUW	C	5600PF	J	50V	C657	ECUX1H103KBG	C	0.01UF	K	50V
C189	ECUX1H562JCW	C	5600PF	J	50V	C672	ECEA25V4R7T	E	4.7UF		25V
C190	ECUX1H562JCW	C	5600PF	J	50V	C674	ECQV1H105JL	P	1UF	J	50V
C196	ECUX1H101JCG	C	100PF	J	50V	C675	ECQB1H104JF	P	0.1UF	J	50V
C255	ECJ2VF1H104Z	C	0.1UF	Z	50V	C682	ECJ2VF1H104Z	C	0.1UF	Z	50V
C256	ECJ2VF1H104Z	C	0.1UF	Z	50V	C683	ECJ2VF1H104Z	C	0.1UF	Z	50V
C257	ECUX1H271JCG	C	270PF	J	50V	C684	ECJ2VF1H104Z	C	0.1UF	Z	50V
C258	ECUX1H121JCG	C	120PF	J	50V	C706	ECA1EEN100	E	10UF		25V
C259	ECUX1H150JCN	C	15PF	J	50V	⚠ C801	ECQU2A334MVZ	PP	0.33UF	M	250V
C280	ECA1HEN010	E	1UF		50V	⚠ C804	ECKDRS472MEY	C	4700PF	M	
C281	ECUX1H103KBG	C	0.01UF	K	50V	⚠ C805	ECKDRS472MEY	C	4700PF	M	
C352	ECA2CHG100	E	10UF		160V	⚠ C806	ECQU2A104MNF	PP	0.1UF	M	250V
C353	ECQV1474JZ	P	0.47UF	J	100V	⚠ C807	ECQU2A224MNF	PP	0.22UF	M	250V
C369	ECA1HHG470	E	47UF		50V	C819	ECQE2154KF	P	0.15UF	K	200V
C370	ECUX1H361JCG	C	360PF	J	50V	C820	ECUX1C105KBW	C	1UF	K	16V
C371	ECKD2H471KB5	C	470PF	K	500V	C821	TAC1094Z391A	E	390UF		400V
C372	ECUX1H080DCN	C	8PF	D	50V	C822	ECQE2154KF	P	0.15UF	K	200V
C373	ECEA2EGE100	E	10UF		250V	C823	ECKD3A271KBP	C	270PF	K	1KV
C375	ECUX1H103KBG	C	0.01UF	K	50V	C825	ECEA1VGE330	E	33UF		35V
C376	ECA1CHG221	E	220UF		16V	C828	ECUX1H222KBN	C	2200PF	K	50V
C377	ECEA1EGE330	E	33UF		25V	⚠ C831	ECKDRS332MEY	C	3300PF	M	
C380	ECQE2104KF	P	0.1UF	K	200V	⚠ C832	ECKDRS332MEY	C	3300PF	M	
C440	ECA1EHG222	E	2200UF		25V	C833	ECJ2VF1H104Z	C	0.1UF	Z	50V
C441	TACCC1H100MT	E	10UF		50V	C834	ECUX1H222KBN	C	2200PF	K	50V
C444	TACCC1H101MT	E	100UF		50V	C835	ECQB1H222JF	P	2200PF	J	50V
C445	TACCC1H101MT	E	100UF		50V	C836	ECUX1H221KBN	C	220PF	K	50V
C446	ECUX1H102KBN	C	1000PF	K	50V	C837	ECEA1HGE2R2	E	2.2UF		50V
C447	ECA1EHG222	E	2200UF		25V	C839	ECUX1H222KBN	C	2200PF	K	50V
C448	ECQV1473JM	P	0.047UF	J	100V	C841	ECEA1EGE101	E	100UF		25V
C449	ECUX1H103KBG	C	0.01UF	K	50V	C842	ECUX1H104ZFW	C	0.1UF	Z	50V
C450	ECQE1474KF	P	0.47UF	K	100V	C843	ECEA1EGE330	E	33UF		25V
C451	ECQE1563KF	P	0.056UF	K	100V	C844	ECJ2VF1H104Z	C	0.1UF	Z	50V
C501	TACBH2E224MT	C	0.22UF	M	250V	C845	ECEA1EGE100	E	10UF		25V
C503	ECJ2VF1H104Z	C	0.1UF	Z	50V	C846	ECUX1H822KBG	C	8200PF	K	50V
C504	ECA2AHG100	E	10UF		100V	C848	ECEA1EGE330	E	33UF		25V
C505	ECJ2VF1C105Z	C	1UF	Z	16V	C851	TACCC1C102MT	E	1000UF		16V
C506	ECJ2VF1H104Z	C	0.1UF	Z	50V	C852	ECQE1474KF	P	0.47UF	K	100V
C508	ECUX1E473KBX	C	0.047UF	K	25V	C853	ECEA1CGE470	E	47UF		16V
C530	ECA2EHG2R2	E	2.2UF		250V	C858	ECJ2VF1H104Z	C	0.1UF	Z	50V

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C859	ECA2EHG101	E	100UF		250V	C1065	TACBG2E683KT	C	0.068UF	K	250V
C860	TACBK2A224MT	C	0.22UF	M	100V	C1066	ECEA2CGE010	E	1UF		160V
C861	ECOS2EA221CB	E	220UF		250V	C1068	ECUX1H100CCN	C	10PF	C	50V
C862	TACCC2A471MB	E	470UF		100V	C1101	ECUX1H103KBG	C	0.01UF	K	50V
C863	TAC11035102T	E	1000UF		35V	C1102	TACCL0J227MT	E	220UF		6.3V
C864	TACCC1E222MT	E	2200UF		25V	C1103	ECUX1H103KBG	C	0.01UF	K	50V
C865	ECEA1EGE102	E	1000UF		25V	C1104	ECUX1H101JCG	C	100PF	J	50V
C866	ECEA1EGE102	E	1000UF		25V	C1111	ECUX1H103KBG	C	0.01UF	K	50V
C867	TACBK2A224MT	C	0.22UF	M	100V	C1112	TACCL0J227MT	E	220UF		6.3V
C868	ECEA1EGE222	E	2200UF		25V	C1113	ECUX1H103KBG	C	0.01UF	K	50V
C869	ECA1CHG331	E	330UF		16V	C1114	ECUX1H101JCG	C	100PF	J	50V
C870	ECA1CHG331	E	330UF		16V	C1120	ECUX1H103KBG	C	0.01UF	K	50V
C872	ECUX1C224KBW	C	0.22UF	K	16V	C1121	ECA1HEN4R7	E	4.7UF		50V
C874	ECA1HHG470	E	47UF		50V	C1122	ECUX1H103KBG	C	0.01UF	K	50V
C875	TACCB2A331MA	E	330UF		100V	C1130	ECUX1H103KBG	C	0.01UF	K	50V
C876	ECUX1H103KBG	C	0.01UF	K	50V	C1131	ECEA1EGE100	E	10UF		25V
C877	ECA1HHG220	E	22UF		50V	C1132	ECUX1H103KBG	C	0.01UF	K	50V
C878	ECA1CHG101	E	100UF		16V	C1133	ECUX1H103KBG	C	0.01UF	K	50V
C879	ECA1HHG470	E	47UF		50V	C1134	ECJ2VF1C105Z	C	1UF	Z	16V
C880	ECEA1EGE220	E	22UF		25V	C1141	ECUX1H680GCG	C	68PF	G	50V
C881	ECA1HHG100	E	10UF		50V	C1142	ECUX1H150GCN	C	15PF	G	50V
C882	ECEA1HGE100	E	10UF		50V	C1143	ECUX1H030CCN	C	3PF	C	50V
C883	ECQB1H224JF	P	0.22UF	J	50V	C1150	TACBN2A102KT	C	1000PF	K	100V
C884	ECUX1H102KBN	C	1000PF	K	50V	C1151	TACBN2A103KT	C	0.01UF	K	100V
C885	ECKD2H152KB5	C	1500PF	K	500V	C1153	TACBH2A474MT	C	0.47UF	M	100V
C886	ECUX1H222KBN	C	2200PF	K	50V	C1155	TACBJ2H222KT	C	2200PF	K	500V
C887	ECUX1H681KBN	C	680PF	K	50V	C1165	TACBG2E683KT	C	0.068UF	K	250V
C888	TACBU2E333KT	C	0.033UF	K	250V	C1166	ECEA2CGE010	E	1UF		160V
C889	ECQE2684KF	P	0.68UF	K	200V	C1168	ECUX1H100CCN	C	10PF	C	50V
C890	ECEA1HGE4R7	E	4.7UF		50V	C1201	ECUX1H103KBG	C	0.01UF	K	50V
C891	TAC1102A331T	E	330UF		100V	C1202	TACCL0J227MT	E	220UF		6.3V
C893	ECUX1H561JCX	C	560PF	J	50V	C1203	ECUX1H103KBG	C	0.01UF	K	50V
C894	ECJ2VF1H104Z	C	0.1UF	Z	50V	C1204	ECUX1H101JCG	C	100PF	J	50V
C896	ECUX1E104KBX	C	0.1UF	K	25V	C1211	ECUX1H103KBG	C	0.01UF	K	50V
C897	ECUX1H472KBM	C	4700PF	K	50V	C1212	TACCL0J227MT	E	220UF		6.3V
C898	ECA2EHG470	E	47UF		250V	C1213	ECUX1H103KBG	C	0.01UF	K	50V
C899	ECUX1E104KBX	C	0.1UF	K	25V	C1214	ECUX1H101JCG	C	100PF	J	50V
C902	ECUX1H104ZFW	C	0.1UF	Z	50V	C1220	ECUX1H103KBG	C	0.01UF	K	50V
C1001	ECUX1H103KBG	C	0.01UF	K	50V	C1221	ECA1HEN4R7	E	4.7UF		50V
C1002	TACCL0J227MT	E	220UF		6.3V	C1222	ECUX1H103KBG	C	0.01UF	K	50V
C1003	ECUX1H103KBG	C	0.01UF	K	50V	C1230	ECUX1H103KBG	C	0.01UF	K	50V
C1004	ECUX1H101JCG	C	100PF	J	50V	C1231	ECEA1EGE100	E	10UF		25V
C1011	ECUX1H103KBG	C	0.01UF	K	50V	C1232	ECUX1H103KBG	C	0.01UF	K	50V
C1012	TACCL0J227MT	E	220UF		6.3V	C1233	ECUX1H103KBG	C	0.01UF	K	50V
C1013	ECUX1H103KBG	C	0.01UF	K	50V	C1234	ECJ2VF1C105Z	C	1UF	Z	16V
C1014	ECUX1H101JCG	C	100PF	J	50V	C1241	ECUX1H680GCG	C	68PF	G	50V
C1020	ECUX1H103KBG	C	0.01UF	K	50V	C1242	ECUX1H150GCN	C	15PF	G	50V
C1021	ECA1HEN4R7	E	4.7UF		50V	C1250	TACBN2A102KT	C	1000PF	K	100V
C1022	ECUX1H103KBG	C	0.01UF	K	50V	C1251	TACBN2A103KT	C	0.01UF	K	100V
C1030	ECUX1H103KBG	C	0.01UF	K	50V	C1252	ECEA2AGE100	E	10UF		100V
C1031	ECEA1EGE100	E	10UF		25V	C1253	TACBH2A474MT	C	0.47UF	M	100V
C1032	ECUX1H103KBG	C	0.01UF	K	50V	C1255	TACBJ2H222KT	C	2200PF	K	500V
C1033	ECUX1H103KBG	C	0.01UF	K	50V	C1265	TACBG2E683KT	C	0.068UF	K	250V
C1034	ECJ2VF1C105Z	C	1UF	Z	16V	C1266	ECEA2CGE010	E	1UF		160V
C1041	ECUX1H680GCG	C	68PF	G	50V	C1268	ECUX1H100CCN	C	10PF	C	50V
C1042	ECUX1H150GCN	C	15PF	G	50V	C1301	TACCL1C476MT	E	470UF		16V
C1043	ECUX1H040CCN	C	4PF	C	50V	C1302	TACCL1H105MT	E	1UF		50V
C1050	TACBN2A102KT	C	1000PF	K	100V	C1304	ECUX1H103KBG	C	0.01UF	K	50V
C1051	TACBN2A103KT	C	0.01UF	K	100V	C1305	ECUX1H103KBG	C	0.01UF	K	50V
C1052	ECEA2AGE100	E	10UF		100V	C1306	ECUX1H103KBG	C	0.01UF	K	50V
C1053	TACBH2A474MT	C	0.47UF	M	100V	C1310	TACCL1C476MT	E	470UF		16V
C1055	TACBJ2H222KT	C	2200PF	K	500V	C1312	TACCL1H105MT	E	1UF		50V

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C1313	ECEA1HGE100	E	10UF		50V	J705	ERJ8GCYOR00	M	0 OHM		1/8W
C1314	ECJ2VF1H104Z	C	0.1UF	Z	50V	J706	ERJ8GCYOR00	M	0 OHM		1/8W
C1320	ECEA1CGE470	E	47UF		16V	J707	ERJ8GCYOR00	M	0 OHM		1/8W
C1321	ECUX1H103KBG	C	0.01UF	K	50V	J708	ERJ8GCYOR00	M	0 OHM		1/8W
C1322	ECA1HHG100	E	10UF		50V	J709	ERJ8GCYOR00	M	0 OHM		1/8W
C1323	ECUX1H103KBG	C	0.01UF	K	50V	J710	ERJ8GCYOR00	M	0 OHM		1/8W
C1326	ECEA1CGE471	E	470UF		16V	J712	ERJ8GCYOR00	M	0 OHM		1/8W
C1327	ECUX1H103KBG	C	0.01UF	K	50V	J713	ERJ8GCYOR00	M	0 OHM		1/8W
C1328	ECEA1CGE471	E	470UF		16V	J714	ERJ8GCYOR00	M	0 OHM		1/8W
C1329	ECEA1AGE101	E	100UF		10V	J715	ERJ8GCYOR00	M	0 OHM		1/8W
C1331	ECEA1AGE101	E	100UF		10V	J716	ERJ8GCYOR00	M	0 OHM		1/8W
C1332	ECJ2VF1E224Z	C	0.22UF	Z	25V	J717	ERJ8GCYOR00	M	0 OHM		1/8W
C1333	ECUX1H103KBG	C	0.01UF	K	50V	J718	ERJ8GCYOR00	M	0 OHM		1/8W
C1334	ECEA1CGE470	E	47UF		16V	J719	ERJ8GCYOR00	M	0 OHM		1/8W
C1335	ECEA1CGE470	E	47UF		16V	J721	ERJ8GCYOR00	M	0 OHM		1/8W
C1336	ECEA1CGE470	E	47UF		16V	J722	ERJ8GCYOR00	M	0 OHM		1/8W
C1340	TCUX1C225ZFN	C	2.2UF	Z	16V	J724	ERJ8GCYOR00	M	0 OHM		1/8W
C1342	ECEA2AGE220	E	22UF		100V	J725	ERJ8GCYOR00	M	0 OHM		1/8W
C1344	ECUX1H102KBN	C	1000PF	K	50V	J726	ERJ8GCYOR00	M	0 OHM		1/8W
C1345	ECJ2VF1H104Z	C	0.1UF	Z	50V	J727	ERJ8GCYOR00	M	0 OHM		1/8W
C1346	ECEA1EGE100	E	10UF		25V	J729	ERJ8GCYOR00	M	0 OHM		1/8W
C1348	ECEA2CGE100	E	10UF		160V	J730	ERJ8GCYOR00	M	0 OHM		1/8W
C1349	TCUX1C225ZFN	C	2.2UF	Z	16V	J731	ERJ8GCYOR00	M	0 OHM		1/8W
C1351	TACBJ2H222KT	C	2200PF	K	500V	J732	ERJ8GCYOR00	M	0 OHM		1/8W
C1355	TACBJ2H102KT	C	1000PF	K	500V	J733	ERJ8GCYOR00	M	0 OHM		1/8W
C1356	TACBJ2H101KT	C	100PF	K	500V	J734	ERJ8GCYOR00	M	0 OHM		1/8W
C1357	ECKD3D272KBP	C	2700PF	K	2KV	J735	ERJ8GCYOR00	M	0 OHM		1/8W
C1358	TACBJ2J222KT	C	2200PF	K	630V	J736	ERJ8GCYOR00	M	0 OHM		1/8W
C1359	TACBJ2J222KT	C	2200PF	K	630V	J737	ERJ8GCYOR00	M	0 OHM		1/8W
C1360	TACBJ2J222KT	C	2200PF	K	630V	J738	ERJ8GCYOR00	M	0 OHM		1/8W
C1365	TCUX2H110JCM	C	11PF	J	500V	J739	ERJ8GCYOR00	M	0 OHM		1/8W
C1370	TACBJ2H102KT	C	1000PF	K	500V	J1301	ERD25TC0	C	0 OHM		1/4W
C1372	ECUX1H221KBN	C	220PF	K	50V	J1302	ERD25TC0	C	0 OHM		1/4W
C1381	ECJ2VF1H104Z	C	0.1UF	Z	50V	J1321	ERD25TC0	C	0 OHM		1/4W
C1391	TACBG2E683KT	C	0.068UF	K	250V	J1325	ERJ6GEYOR00	M	0 OHM		1/10W
C1402	ECUX1H223KBX	C	0.022UF	K	50V	L1056	ERJ8GCYOR00	M	0 OHM		1/8W
C1403	ECJ2VF1E224Z	C	0.22UF	Z	25V	L1156	ERJ8GCYOR00	M	0 OHM		1/8W
C1404	ECUX1H221KBN	C	220PF	K	50V	L1256	ERJ8GCYOR00	M	0 OHM		1/8W
C1405	ECUX1H104KBW	C	0.1UF	K	50V	R10	ERDS2TJ101	C	100 OHM	J	1/4W
C1406	ECEA1AGE101	E	100UF		10V	R11	ERJ6ENF1002	M	10K OHM	F	1/10W
C1408	ECUX1H220JCN	C	22PF	J	50V	R12	ERJ6ENF4703	M	470K OHM	F	1/10W
C1409	ECJ2VF1C105Z	C	1UF	Z	16V	R13	ERJ6ENF1052	M	10.5K OHM	F	1/10W
C1410	ECEA1EGE100	E	10UF		25V	R14	ERJ6ENF3301	M	3.3K OHM	F	1/10W
C1412	ECEA1HGE3R3	E	3.3UF		50V	R15	ERG2SJ183	M	18K OHM	J	2W
C1414	ECEA1HGE3R3	E	3.3UF		50V	R16	ERJ6ENF2320	M	232 OHM	F	1/10W
	RESISTORS					R18	ERG1SJ273	M	27K OHM	J	1W
						R19	ERJ6ENF4702	M	47K OHM	F	1/10W
C1353	ERJ8GCYOR00	M	0 OHM		1/8W	R20	ERJ6ENF4702	M	47K OHM	F	1/10W
J601	ERJ6GEYOR00	M	0 OHM		1/10W	R22	ERJ6GEYOR00	M	0 OHM		1/10W
J602	ERJ6GEYOR00	M	0 OHM		1/10W	R23	ERJ6GEYJ105	M	1M OHM	J	1/10W
J603	ERJ6GEYOR00	M	0 OHM		1/10W						
J604	ERJ6GEYOR00	M	0 OHM		1/10W	R24	ERJ6ENF4703	M	470K OHM	F	1/10W
						R25	ERJ6ENF1000	M	100 OHM	F	1/10W
J605	ERJ6GEYOR00	M	0 OHM		1/10W	R26	ERJ6GEYJ333	M	33K OHM	J	1/10W
J606	ERJ6GEYOR00	M	0 OHM		1/10W	R31	ERJ6GEYJ102	M	1K OHM	J	1/10W
J607	ERJ6GEYOR00	M	0 OHM		1/10W	R32	ERJ8GCYK2R7	M	2.7 OHM	K	1/8W
J608	ERJ6GEYOR00	M	0 OHM		1/10W						
J609	ERJ6GEYOR00	M	0 OHM		1/10W	R33	ERG1SJ100	M	10 OHM	J	1W
						R50	ERJ6GEYJ102	M	1K OHM	J	1/10W
J610	ERJ6GEYOR00	M	0 OHM		1/10W	R51	ERJ6GEYJ102	M	1K OHM	J	1/10W
J701	ERJ8GCYOR00	M	0 OHM		1/8W	R52	ERJ6GEYJ102	M	1K OHM	J	1/10W
J702	ERJ8GCYOR00	M	0 OHM		1/8W	R53	ERJ6GEYJ102	M	1K OHM	J	1/10W
J703	ERJ8GCYOR00	M	0 OHM		1/8W						
J704	ERJ8GCYOR00	M	0 OHM		1/8W	R55	ERJ6GEYJ102	M	1K OHM	J	1/10W
						R56	ERJ6GEYJ102	M	1K OHM	J	1/10W

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
R58	ERJ6GEYJ102	M	1K OHM	J	1/10W	R209	ERJ6GEYJ471	M	470 OHM	J	1/10W
R101	ERJ6GEYJ103	M	10K OHM	J	1/10W	R210	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R102	ERJ6GEYJ103	M	10K OHM	J	1/10W	R213	ERJ6GEY0R00	M	0 OHM		1/10W
R103	ERJ6GEYJ103	M	10K OHM	J	1/10W	R214	ERJ6GEY0R00	M	0 OHM		1/10W
R104	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R220	ERJ6GEY0R00	M	0 OHM		1/10W
R105	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R221	ERJ6GEY0R00	M	0 OHM		1/10W
R106	ERJ6GEYJ103	M	10K OHM	J	1/10W	R222	ERJ6GEYJ103	M	10K OHM	J	1/10W
R107	ERJ6GEYJ103	M	10K OHM	J	1/10W	R223	ERJ6GEYJ123	M	12K OHM	J	1/10W
R109	ERJ6GEYJ103	M	10K OHM	J	1/10W	R224	ERJ6GEYJ563	M	56K OHM	J	1/10W
R110	ERJ6GEYJ103	M	10K OHM	J	1/10W	R240	ERJ6GEYJ271	M	270 OHM	J	1/10W
R111	ERJ6GEYJ152	M	1.5K OHM	J	1/10W	R241	ERJ6GEYJ271	M	270 OHM	J	1/10W
R112	ERJ6GEYJ122	M	1.2K OHM	J	1/10W	R242	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R115	ERJ6GEY0R00	M	0 OHM		1/10W	R243	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R120	ERJ6GEYJ272	M	2.7K OHM	J	1/10W	R250	ERJ6GEY0R00	M	0 OHM		1/10W
R121	ERJ6GEYJ822	M	8.2K OHM	J	1/10W	R255	ERJ6GEYJ272	M	2.7K OHM	J	1/10W
R123	ERJ6GEYJ122	M	1.2K OHM	J	1/10W	R256	ERJ6GEYJ121	M	120 OHM	J	1/10W
R124	ERJ6GEYJ392	M	3.9K OHM	J	1/10W	R257	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R125	ERJ6GEYJ335	M	3.3M OHM	J	1/10W	R258	ERJ6GEYJ561	M	560 OHM	J	1/10W
R127	ERJ6GEY0R00	M	0 OHM		1/10W	R261	ERJ6GEYJ683	M	68K OHM	J	1/10W
R131	ERJ6GEYJ272	M	2.7K OHM	J	1/10W	R271	ERJ6GEYJ223	M	22K OHM	J	1/10W
R132	ERJ6GEYJ272	M	2.7K OHM	J	1/10W	R272	ERJ6GEYJ223	M	22K OHM	J	1/10W
R133	ERJ6GEY0R00	M	0 OHM		1/10W	R273	ERJ6GEYJ102	M	1K OHM	J	1/10W
R134	ERJ6GEY0R00	M	0 OHM		1/10W	R274	ERJ6GEYJ102	M	1K OHM	J	1/10W
R135	ERJ6GEYJ471	M	470 OHM	J	1/10W	R280	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R136	ERJ6GEYJ470	M	47 OHM	J	1/10W	R281	ERJ6GEYJ104	M	100K OHM	J	1/10W
R137	ERJ6GEYJ470	M	47 OHM	J	1/10W	R282	ERJ6GEYJ102	M	1K OHM	J	1/10W
R140	ERJ6GEYJ103	M	10K OHM	J	1/10W	R283	ERJ6GEYJ331	M	330 OHM	J	1/10W
R141	ERJ6GEYJ103	M	10K OHM	J	1/10W	R284	ERJ6GEYJ331	M	330 OHM	J	1/10W
R142	ERJ6GEYJ103	M	10K OHM	J	1/10W	R285	ERJ6GEYJ102	M	1K OHM	J	1/10W
R145	ERJ6GEYJ103	M	10K OHM	J	1/10W	R286	ERJ6GEYJ561	M	560 OHM	J	1/10W
R146	ERJ6GEYJ103	M	10K OHM	J	1/10W	R291	ERJ6GEYJ223	M	22K OHM	J	1/10W
R149	ERJ6GEYJ183	M	18K OHM	J	1/10W	R292	ERJ6GEYJ223	M	22K OHM	J	1/10W
R150	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R293	ERJ6GEYJ102	M	1K OHM	J	1/10W
R151	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R294	ERJ6GEYJ102	M	1K OHM	J	1/10W
R152	ERJ12YJ471	M	470 OHM	J	1/2W	R350	ERQ14AJ330	F	33 OHM	J	1/4W
R153	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R353	ERDS1FJ100	C	10 OHM	J	1/2W
R154	ERJ6GEYJ102	M	1K OHM	J	1/10W	R354	ERDS1FJ100	C	10 OHM	J	1/2W
R155	ERJ6GEYJ472	M	4.7K OHM	J	1/10W	R355	ERG2SJ270	M	27 OHM	J	2W
R156	ERJ6GEYJ472	M	4.7K OHM	J	1/10W	R371	ERDS1FJ364	C	360K OHM	J	1/2W
R162	ERJ6GEYJ152	M	1.5K OHM	J	1/10W	R372	ERJ8GCYJ475	M	4.7M OHM	J	1/8W
R163	ERJ6GEYJ683	M	68K OHM	J	1/10W	R373	ERJ8GCYJ683	M	68K OHM	J	1/8W
R164	ERJ6GEYJ102	M	1K OHM	J	1/10W	R374	ERJ8ENF1101	M	1.1K OHM	F	1/8W
R165	ERJ6GEY0R00	M	0 OHM		1/10W	R375	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R170	ERJ6ENF2202	M	22K OHM	F	1/10W	R380	ERD25FJ102K	C	1K OHM	J	1/4W
R171	ERJ6ENF5622	M	56.2K OHM	F	1/10W	R381	ERJ6ENF2051	M	2.05K OHM	F	1/10W
R172	ERJ6ENF5622	M	56.2K OHM	F	1/10W	R382	ERJ6ENF6982	M	69.8K OHM	F	1/10W
R173	ERJ6ENF6802	M	68K OHM	F	1/10W	R384	ERJ6ENF2871	M	2.87K OHM	F	1/10W
R174	ERJ6GEYJ270	M	27 OHM	J	1/10W	R385	ERJ8GCYJ121	M	120 OHM	J	1/8W
R175	ERJ6GEYJ270	M	27 OHM	J	1/10W	R386	ERG3FJ103	M	10K OHM	J	3W
R177	ERJ6GEY0R00	M	0 OHM		1/10W	R387	ERJ8GCYJ302	M	3K OHM	J	1/8W
R191	ERJ6GEYJ271	M	270 OHM	J	1/10W	R389	ERJ8GCYJ102	M	1K OHM	J	1/8W
R192	ERJ6GEYJ271	M	270 OHM	J	1/10W	R390	ERJ6ENF1071	M	1.07K OHM	F	1/10W
R193	ERJ6GEYJ471	M	470 OHM	J	1/10W	R391	ERJ6GEYJ103	M	10K OHM	J	1/10W
R194	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R392	ERJ6GEYJ562	M	5.6K OHM	J	1/10W
R195	ERJ6GEYJ222	M	2.2K OHM	J	1/10W	R393	ERG1SJ273	M	27K OHM	J	1W
R196	ERJ6GEYJ471	M	470 OHM	J	1/10W	R407	ERJ6ENF2432	M	24.3K OHM	F	1/10W
R197	ERJ6GEYJ103	M	10K OHM	J	1/10W	R425	ERDS2TJ222	C	2.2K OHM	J	1/4W
R200	ERJ6GEYJ471	M	470 OHM	J	1/10W	R440	ERJ6GEYJ103	M	10K OHM	J	1/10W
R201	ERJ6GEYJ101	M	100 OHM	J	1/10W	R441	ERJ6GEYJ103	M	10K OHM	J	1/10W
R204	ERJ6GEYJ471	M	470 OHM	J	1/10W	R480	ERJ6ENF1742	M	17.4K OHM	F	1/10W
R205	ERJ6GEYJ101	M	100 OHM	J	1/10W	R481	ERJ6ENF2941	M	2.94K OHM	F	1/10W
R208	ERJ6GEYJ471	M	470 OHM	J	1/10W	R482	ERDS1FJ1R2	C	1.2 OHM	J	1/2W

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
R483	ERDS1FJ1R2	C	1.2	OHM	J	1/2W	R672	EROS2CKF1433	M	143K	OHM	F	1/4W
R484	EROS2CKF1202	M	12K	OHM	F	1/4W	R673	ERDS2TJ474	C	470K	OHM	J	1/4W
R485	ERJ6GEYJ122	M	1.2K	OHM	J	1/10W	R680	ERJ6GEYJ153	M	15K	OHM	J	1/10W
R486	ERJ6ENF1872	M	18.7K	OHM	F	1/10W	R682	ERJ6GEYJ221	M	220	OHM	J	1/10W
R487	ERDS2TJ1R0	C	1	OHM	J	1/4W	R683	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W
R488	ERX1SG1R2	M	1.2	OHM	G	1W	R684	ERJ6ENF1002	M	10K	OHM	F	1/10W
R489	ERX1SG1R8	M	1.8	OHM	G	1W	R685	ERJ6ENF2372	M	23.7K	OHM	F	1/10W
R501	ERX2SJ3R3	M	3.3	OHM	J	2W	R687	ERJ6GEYJ333	M	33K	OHM	J	1/10W
R502	ERG1SJ390	M	39	OHM	J	1W	R720	ERJ6GEYJ682	M	6.8K	OHM	J	1/10W
R503	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W	R721	ERJ6GEYJ164	M	160K	OHM	J	1/10W
R504	ERJ6GEYJ153	M	15K	OHM	J	1/10W	R722	ERJ6GEYJ182	M	1.8K	OHM	J	1/10W
R505	ERX2SJ3R3	M	3.3	OHM	J	2W	R801	ERC12AGK105	S	1M	OHM	K	1/2W
R506	ERD25FJ153K	C	15K	OHM	J	1/4W	R820	ERJ6GEYJ563	M	56K	OHM	J	1/10W
R507	ERJ6GEYJ392	M	3.9K	OHM	J	1/10W	R821	ERF2EKR22	W	0.22	OHM	K	2W
R508	ERJ6GEYJ102	M	1K	OHM	J	1/10W	R822	TARRS3B104J2	M	100K	OHM	J	3W
R509	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W	R823	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R527	ERJ6GEY0R00	M	0	OHM		1/10W	R824	ERJ6ENF1211	M	1.21K	OHM	F	1/10W
R530	ERQ12AJ270	F	27	OHM	J	1/2W	R825	ERJ6GEYJ682	M	6.8K	OHM	J	1/10W
R531	ERJ12YJ5R6	M	5.6	OHM	J	1/2W	R826	ERJ6ENF7152	M	71.5K	OHM	F	1/10W
R532	ERJ12YJ5R6	M	5.6	OHM	J	1/2W	R827	ERDS1FJ394	C	390K	OHM	J	1/2W
R542	ERJ6ENF7871	M	7.87K	OHM	F	1/10W	R828	ERDS1FJ394	C	390K	OHM	J	1/2W
R543	ERJ6ENF6491	M	6.49K	OHM	F	1/10W	R829	ERJ8GCYJ223	M	22K	OHM	J	1/8W
R544	ERJ6ENF1822	M	18.2K	OHM	F	1/10W	R830	ERJ6GEYJ273	M	27K	OHM	J	1/10W
R545	ERG3FJ470	M	47	OHM	J	3W	R831	ERD25FJ560K	C	56	OHM	J	1/4W
R546	ERG3FJ470	M	47	OHM	J	3W	R832	ERJ6GEYJ220	M	22	OHM	J	1/10W
R547	ERJ6GEYJ470	M	47	OHM	J	1/10W	R833	ERD25FJ223K	C	22K	OHM	J	1/4W
R548	ERJ6GEYJ332	M	3.3K	OHM	J	1/10W	R834	ERJ8GCYJ222	M	2.2K	OHM	J	1/8W
R549	ERG2SJ561	M	560	OHM	J	2W	R835	ERJ8GCYJ222	M	2.2K	OHM	J	1/8W
R550	ERQ12AJR47	F	0.47	OHM	J	1/2W	R836	ERG3FJ820	M	82	OHM	J	3W
R551	ERX3FJX1R8D	M	1.8	OHM	J	3W	R837	ERJ6ENF1400	M	140	OHM	F	1/10W
R552	ERX3FJX1R8D	M	1.8	OHM	J	3W	R838	ERJ6GEYJ222	M	2.2K	OHM	J	1/10W
R554	ERX3FJX6R8D	M	6.8	OHM	J	3W	R839	ERJ6GEYJ332	M	3.3K	OHM	J	1/10W
R555	ERD25TC0	C	0	OHM		1/4W	R840	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R560	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W	R841	ERDS1FJ104	C	100K	OHM	J	1/2W
R561	ERJ6GEYJ100	M	10	OHM	J	1/10W	R842	ERJ6GEYJ180	M	18	OHM	J	1/10W
R563	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W	R843	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R564	ERJ6GEYJ100	M	10	OHM	J	1/10W	R847	ERJ6GEYK2R2	M	2.2	OHM	K	1/10W
R566	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W	R849	ERDS2TJ122	C	1.2K	OHM	J	1/4W
R567	ERJ6GEYJ100	M	10	OHM	J	1/10W	R850	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R568	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W	R853	ERJ6GEYJ271	M	270	OHM	J	1/10W
R569	ERJ6GEYJ100	M	10	OHM	J	1/10W	R854	ERJ6GEYJ820	M	82	OHM	J	1/10W
R574	ERDS1FJ181	C	180	OHM	J	1/2W	R855	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R575	ERQ12AJ271	F	270	OHM	J	1/2W	R856	ERA6YEB104	M	100K	OHM	B	1/10W
R595	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W	R857	ERA6YEB302	M	3K	OHM	B	1/10W
R596	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W	R858	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R597	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W	R859	ERD25FJ391K	C	390	OHM	J	1/4W
R602	ERX1SJR33	M	0.33	OHM	J	1W	R860	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R603	ERX1SJR27	M	0.27	OHM	J	1W	R861	ERQ12AJR33HK	F	0.33	OHM	J	1/2W
R604	TARRS5B101J2	M	100	OHM	J	5W	R862	TAR14CJ0R15V	M	0.15	OHM	J	1/2W
R605	TARRS5B101J2	M	100	OHM	J	5W	R863	ERQ12AJR47	F	0.47	OHM	J	1/2W
R648	ERJ6ENF8060	M	806	OHM	F	1/10W	R864	ERQ12AJR12HK	F	0.12	OHM	J	1/2W
R649	ERJ6GEY0R00	M	0	OHM		1/10W	R865	ERQ12AJR12HK	F	0.12	OHM	J	1/2W
R650	ERJ8GCY0R00	M	0	OHM		1/8W	R866	ERQ12AJR12HK	F	0.12	OHM	J	1/2W
R651	ERQ14AJ100	F	10	OHM	J	1/4W	R867	ERJ6GEYJ104	M	100K	OHM	J	1/10W
R652	ERQ14AJR47HK	F	0.47	OHM	J	1/4W	R868	ERQ12AJR47	F	0.47	OHM	J	1/2W
R653	ERQ14AJR47HK	F	0.47	OHM	J	1/4W	R869	ERD25FJ471K	C	470	OHM	J	1/4W
R655	ERJ8ENF5231	M	5.23K	OHM	F	1/8W	R870	ERDS1FJ224	C	220K	OHM	J	1/2W
R656	ERJ6GEYJ223	M	22K	OHM	J	1/10W	R871	ERJ6GEYJ183	M	18K	OHM	J	1/10W
R657	ERJ6ENF3162	M	31.6K	OHM	F	1/10W	R872	ERJ6ENF1822	M	18.2K	OHM	F	1/10W
R658	ERJ6ENF1002	M	10K	OHM	F	1/10W	R873	ERJ6ENF4222	M	42.2K	OHM	F	1/10W
R660	ERJ6GEYJ270	M	27	OHM	J	1/10W	R874	ERJ6GEYJ101	M	100	OHM	J	1/10W
R671	EROS2CKF1333	M	133K	OHM	F	1/4W	R875	ERJ6GEYJ102	M	1K	OHM	J	1/10W

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
R876	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W	R1055	ERDS2TJ471	C	470	OHM	J	1/4W
R877	ERJ6GEYJ753	M	75K	OHM	J	1/10W	R1057	ERDS1FJ330	C	33	OHM	J	1/2W
R878	ERG1SJ683	M	68K	OHM	J	1W	R1061	ERJ6ENF2372	M	23.7K	OHM	F	1/10W
R879	ERJ8GCYJ332	M	3.3K	OHM	J	1/8W	R1062	ERJ6ENF4532	M	45.3K	OHM	F	1/10W
R880	EROS2CKF1211	M	1.21K	OHM	F	1/4W	R1065	ERJ6GEYJ221	M	220	OHM	J	1/10W
R881	ERJ6ENF1821	M	1.82K	OHM	F	1/10W	R1066	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R882	ERJ6ENF4531	M	4.53K	OHM	F	1/10W	R1067	ERDS2TJ224	C	220K	OHM	J	1/4W
R883	ERJ6GEYJ103	M	10K	OHM	J	1/10W	R1101	TAJADQ76R8FV	M	76.8	OHM	F	1/3W
R884	ERJ6ENF6041	M	6.04K	OHM	F	1/10W	R1102	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R885	ERJ6ENF3741	M	3.74K	OHM	F	1/10W	R1103	ERJ6GEYJ123	M	12K	OHM	J	1/10W
R886	ERJ6GEYJ103	M	10K	OHM	J	1/10W	R1104	ERJ6ENF1400	M	140	OHM	F	1/10W
R887	ERJ6GEYJ103	M	10K	OHM	J	1/10W	R1107	ERJ6ENF11R5	M	11.5	OHM	F	1/10W
R888	ERJ6GEYJ103	M	10K	OHM	J	1/10W	R1111	TAJADQ76R8FV	M	76.8	OHM	F	1/3W
R889	ERJ6GEYJ391	M	390	OHM	J	1/10W	R1112	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R890	ERX2SJ1R0	M	1	OHM	J	2W	R1113	ERJ6GEYJ123	M	12K	OHM	J	1/10W
R891	ERJ6GEYJ103	M	10K	OHM	J	1/10W	R1114	ERJ6ENF1400	M	140	OHM	F	1/10W
R892	ERJ6ENF4420	M	442	OHM	F	1/10W	R1120	TAJADQ75ROFV	M	75	OHM	F	1/3W
R893	ERDS1FJ224	C	220K	OHM	J	1/2W	R1121	ERJ6GEYJ330	M	33	OHM	J	1/10W
R894	ERJ6GEYJ102	M	1K	OHM	J	1/10W	R1122	ERJ8GCYJ471	M	470	OHM	J	1/8W
R895	ERJ6GEYJ101	M	100	OHM	J	1/10W	R1123	ERJ6GEYJ330	M	33	OHM	J	1/10W
R896	ERJ6GEYJ332	M	3.3K	OHM	J	1/10W	R1130	ERJ6GEYJ330	M	33	OHM	J	1/10W
R897	ERJ6GEYJ225	M	2.2M	OHM	J	1/10W	R1131	ERJ6GEYJ331	M	330	OHM	J	1/10W
R898	ERJ6ENF2001	M	2K	OHM	F	1/10W	R1132	ERJ6GEYJ100	M	10	OHM	J	1/10W
R899	ERJ6GEYJ103	M	10K	OHM	J	1/10W	R1133	ERJ6GEYJ330	M	33	OHM	J	1/10W
R902	ERJ6GEYJ103	M	10K	OHM	J	1/10W	R1140	ERJ6ENF2260	M	226	OHM	F	1/10W
R903	ERJ6GEYJ102	M	1K	OHM	J	1/10W	R1141	ERJ6ENF26R7	M	26.7	OHM	F	1/10W
R905	ERJ6GEYJ331	M	330	OHM	J	1/10W	R1142	ERJ6GEYJ682	M	6.8K	OHM	J	1/10W
R906	ERJ6GEYJ331	M	330	OHM	J	1/10W	R1144	ERJ6ENF1581	M	1.58K	OHM	F	1/10W
R909	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W	R1150	ERJ6ENF1053	M	105K	OHM	F	1/10W
R913	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W	R1152	ERJ6GEY0R00	M	0	OHM		1/10W
R961	ERJ6GEY0R00	M	0	OHM		1/10W	R1155	ERDS2TJ471	C	470	OHM	J	1/4W
R975	ERJ6GEYJ101	M	100	OHM	J	1/10W	R1157	ERDS1FJ330	C	33	OHM	J	1/2W
R978	ERJ6GEYJ101	M	100	OHM	J	1/10W	R1161	ERJ6ENF2372	M	23.7K	OHM	F	1/10W
R979	ERJ6GEYJ101	M	100	OHM	J	1/10W	R1162	ERJ6ENF4532	M	45.3K	OHM	F	1/10W
R988	ERJ6GEYJ102	M	1K	OHM	J	1/10W	R1165	ERJ6GEYJ221	M	220	OHM	J	1/10W
R990	ERDS2TJ103	C	10K	OHM	J	1/4W	R1166	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R991	ERDS2TJ103	C	10K	OHM	J	1/4W	R1167	ERDS2TJ224	C	220K	OHM	J	1/4W
R992	ERJ6GEY0R00	M	0	OHM		1/10W	R1201	TAJADQ76R8FV	M	76.8	OHM	F	1/3W
R993	ERJ6GEY0R00	M	0	OHM		1/10W	R1202	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R1001	TAJADQ76R8FV	M	76.8	OHM	F	1/3W	R1203	ERJ6GEYJ123	M	12K	OHM	J	1/10W
R1002	ERJ6GEYJ223	M	22K	OHM	J	1/10W	R1204	ERJ6ENF3900	M	390	OHM	F	1/10W
R1003	ERJ6GEYJ123	M	12K	OHM	J	1/10W	R1207	ERJ6ENF11R5	M	11.5	OHM	F	1/10W
R1004	ERJ6ENF3900	M	390	OHM	F	1/10W	R1211	TAJADQ76R8FV	M	76.8	OHM	F	1/3W
R1007	ERJ6ENF11R5	M	11.5	OHM	F	1/10W	R1212	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R1011	TAJADQ76R8FV	M	76.8	OHM	F	1/3W	R1213	ERJ6GEYJ123	M	12K	OHM	J	1/10W
R1012	ERJ6GEYJ223	M	22K	OHM	J	1/10W	R1214	ERJ6ENF3900	M	390	OHM	F	1/10W
R1013	ERJ6GEYJ123	M	12K	OHM	J	1/10W	R1220	TAJADQ75ROFV	M	75	OHM	F	1/3W
R1014	ERJ6ENF3900	M	390	OHM	F	1/10W	R1221	ERJ6GEYJ330	M	33	OHM	J	1/10W
R1020	TAJADQ75ROFV	M	75	OHM	F	1/3W	R1222	ERJ8GCYJ471	M	470	OHM	J	1/8W
R1021	ERJ6GEYJ330	M	33	OHM	J	1/10W	R1223	ERJ6GEYJ330	M	33	OHM	J	1/10W
R1022	ERJ8GCYJ471	M	470	OHM	J	1/8W	R1230	ERJ6GEYJ330	M	33	OHM	J	1/10W
R1023	ERJ6GEYJ330	M	33	OHM	J	1/10W	R1231	ERJ6GEYJ331	M	330	OHM	J	1/10W
R1030	ERJ6GEYJ330	M	33	OHM	J	1/10W	R1232	ERJ6GEYJ100	M	10	OHM	J	1/10W
R1031	ERJ6GEYJ331	M	330	OHM	J	1/10W	R1233	ERJ6GEYJ330	M	33	OHM	J	1/10W
R1032	ERJ6GEYJ100	M	10	OHM	J	1/10W	R1240	ERJ6ENF2260	M	226	OHM	F	1/10W
R1033	ERJ6GEYJ330	M	33	OHM	J	1/10W	R1241	ERJ6ENF30R1	M	30.1	OHM	F	1/10W
R1040	ERJ6ENF2260	M	226	OHM	F	1/10W	R1242	ERJ6GEYJ682	M	6.8K	OHM	J	1/10W
R1041	ERJ6ENF29R4	M	29.4	OHM	F	1/10W	R1244	ERJ6ENF1581	M	1.58K	OHM	F	1/10W
R1042	ERJ6GEYJ682	M	6.8K	OHM	J	1/10W	R1250	ERJ6ENF1053	M	105K	OHM	F	1/10W
R1044	ERJ6ENF1581	M	1.58K	OHM	F	1/10W	R1252	ERJ6GEY0R00	M	0	OHM		1/10W
R1050	ERJ6ENF1053	M	105K	OHM	F	1/10W	R1255	ERDS2TJ471	C	470	OHM	J	1/4W
R1052	ERJ6GEY0R00	M	0	OHM		1/10W	R1257	ERDS1FJ330	C	33	OHM	J	1/2W

Ref.No.	Part No.	Description
R1261	ERJ6ENF2372	M 23.7K OHM F 1/10W
R1262	ERJ6ENF4532	M 45.3K OHM F 1/10W
R1265	ERJ6GEYJ221	M 220 OHM J 1/10W
R1266	ERJ6GEYJ103	M 10K OHM J 1/10W
R1267	ERDS2TJ224	C 220K OHM J 1/4W
R1301	ERJ6GEYJ103	M 10K OHM J 1/10W
R1302	ERJ6GEYJ103	M 10K OHM J 1/10W
R1303	ERJ6GEYJ103	M 10K OHM J 1/10W
R1304	ERJ6GEYJ103	M 10K OHM J 1/10W
R1320	ERJ6GEYJ101	M 100 OHM J 1/10W
R1321	ERJ6GEYJ101	M 100 OHM J 1/10W
R1322	ERJ6GEYJ101	M 100 OHM J 1/10W
R1325	ERJ6ENF2372	M 23.7K OHM F 1/10W
R1326	ERJ6ENF4641	M 4.64K OHM F 1/10W
R1327	ERJ6GEYJ470	M 47 OHM J 1/10W
R1330	ERJ6GEYJ102	M 1K OHM J 1/10W
R1331	ERJ6GEYJ683	M 68K OHM J 1/10W
R1332	ERJ6GEY0R00	M 0 OHM 1/10W
R1333	ERJ6ENF7501	M 7.5K OHM F 1/10W
R1334	ERJ6ENF1002	M 10K OHM F 1/10W
R1335	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R1336	ERJ6GEYJ223	M 22K OHM J 1/10W
R1338	ERJ6GEYJ123	M 12K OHM J 1/10W
R1339	ERJ6GEYJ183	M 18K OHM J 1/10W
R1340	ERJ6GEYJ331	M 330 OHM J 1/10W
R1341	ERDS1FJ682	C 6.8K OHM J 1/2W
R1343	ERQ14AJR47HK	F 0.47 OHM J 1/4W
R1345	ERJ6GEYJ222	M 2.2K OHM J 1/10W
R1346	ERDS1FJ561	C 560 OHM J 1/2W
R1347	ERJ6ENF1241	M 1.24K OHM F 1/10W
R1348	ERJ6ENF1002	M 10K OHM F 1/10W
R1355	ERDS1FJ680	C 68 OHM J 1/2W
R1360	ERJ6GEYJ222	M 2.2K OHM J 1/10W
R1361	ERJ6GEYJ563	M 56K OHM J 1/10W
R1362	ERJ6GEYJ102	M 1K OHM J 1/10W
R1364	ERJ6ENF6192	M 61.9K OHM F 1/10W
R1365	EROS2CKF1004	M 1M OHM F 1/4W
R1366	ERJ6GEYJ103	M 10K OHM J 1/10W
R1370	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R1371	ERJ6GEYJ682	M 6.8K OHM J 1/10W
R1372	ERJ6GEYJ332	M 3.3K OHM J 1/10W
R1373	ERJ6GEYJ682	M 6.8K OHM J 1/10W
R1374	ERJ6GEYJ153	M 15K OHM J 1/10W
R1391	ERDS1FJ125	C 1.2M OHM J 1/2W
R1392	ERJ6GEYJ472	M 4.7K OHM J 1/10W
R1393	ERJ6GEYJ152	M 1.5K OHM J 1/10W
R1394	ERJ6GEYJ392	M 3.9K OHM J 1/10W
R1395	ERJ6GEYJ102	M 1K OHM J 1/10W
R1396	ERDS1FJ224	C 220K OHM J 1/2W
R1401	ERJ6GEYJ330	M 33 OHM J 1/10W
R1402	ERJ6GEYJ562	M 5.6K OHM J 1/10W
R1403	ERJ6GEYJ561	M 560 OHM J 1/10W
R1404	ERJ6GEYJ182	M 1.8K OHM J 1/10W
R1405	ERJ6GEYJ105	M 1M OHM J 1/10W
R1412	ERJ6GEYJ101	M 100 OHM J 1/10W
R1413	ERJ6GEYJ101	M 100 OHM J 1/10W
R1414	ERJ6GEYJ102	M 1K OHM J 1/10W
R1415	ERJ6GEYJ102	M 1K OHM J 1/10W
	OTHERS	
	TESA027	CRT PCB HOLDER
	THEC0159	SCREW(FOR CRT PCB HOLDER)

Ref.No.	Part No.	Description
	THE902N	D-SUB SCREW
	THTF001	SCREW(FOR IC/TR/D)
	TMKK027	DOUBLE FACE TAPE
	TMMK030	INSULATION TUBE
	TMM81417-1	CORD BAND(BIG)
	TSC8908-0	FERRITE CORE
	TSXF134	PHONO PIN CABLE(GREY)
	TSXF135	PHONO PIN CABLE(RED)
	TSXF136	PHONO PIN CABLE(BLUE)
	TUCC5270	SHIELD CASE(CRT PCB)
	TUCC5271	SHIELD PLATE(CRT PCB)
	TUWF034	BNC TERMINAL BRACKET
	TUCC5095-1	AC INLET BRACKET
	XTV3+10J	SCREW
	XYE3+EJ10	SCREW
⚠	CL1	TMM85490 LEAD CLAMPER
	CL2	TUXX104 WIRE CLIP
⚠	F801	XBA2C50TB15L FUSE(5.0A)
	F851	TSFX37A632 FUSE(6.3A)
	FG1	TJC85341 EARTH LUG
	FG2	TJC85341 EARTH LUG
	FG3	TJC85341 EARTH LUG
	FG4	TJC85341 EARTH LUG
	FG5	TJC85341 EARTH LUG
	FG6	TJC85341 EARTH LUG
	FG7	TJC85341 EARTH LUG
	FG8	TJC85341 EARTH LUG
	FG9	TJC85341 EARTH LUG
	FG10	TJC85341 EARTH LUG
	FG11	TJC85341 EARTH LUG
	FG101	TJC85341 EARTH LUG
	FG102	TJC85341 EARTH LUG
	FG103	TJC85341 EARTH LUG
	FS801	TJC85502T FUSE HOLDER
	FS802	TJC85502T FUSE HOLDER
⚠	N11	EMCS0464M 4P CONNECTOR
⚠	N12-	TSXX082 2P/3P CONNECTOR ASSY
⚠	N22A	TJSF07805 5P CONNECTOR
⚠	N22B	TJSF16305 5P CONNECTOR
⚠	N100A	TJSF07820 20P CONNECTOR
⚠	N100B	TJSF16320 20P CONNECTOR(L-TYPE)
⚠	N101	TJS118590 2P CONNECTOR
⚠	N150A	TJSF08012 12P CONNECTOR
⚠	N150B	TJSF07912 12P CONNECTOR(L-TYPE)
	N231	TJSF10400 BNC TERMINAL
	N232	TJSF10400 BNC TERMINAL
	N490	TJEA022 HEAT SINK TERMINAL
	N651	TJC85342T LUG TERMINAL
	N652	TJCD003 TERMINAL
⚠	N801	TJS8A9361 AC SOCKET
⚠	N861	EMCS0264M 2P CONNECTOR
	N891	TEL302-9 TERMINAL
	N893	TEL302-9 TERMINAL
⚠	N903	EMCS0451ML 4P CONNECTOR(L-TYPE)
	N1001	TJSF10400 BNC TERMINAL
	N1002A	TJS8A4291 PHONO PIN CONNECTOR
	N1002B	TJS8A4291 PHONO PIN CONNECTOR
⚠	N1004	TJSC00600 CRT SOCKET
	N1005	TJC85342T LUG TERMINAL
	N1006	TJCD003 TERMINAL
⚠	N1007-	TSXX054 1P/2P CONNECTOR ASSY
	N1011	TJSF26615 15P CONNECTOR(D-SUB)

	Ref.No.	Part No.	Description		Ref.No.	Part No.	Description
⚠	N1015A	TJSF09554	54P CONNECTOR				
	N1101	TJSF10400	BNC TERMINAL				
	N1102A	TJS8A4291	PHONO PIN CONNECTOR				
	N1102B	TJS8A4291	PHONO PIN CONNECTOR				
	N1201	TJSF10400	BNC TERMINAL				
	N1202A	TJS8A4291	PHONO PIN CONNECTOR				
	N1202B	TJS8A4291	PHONO PIN CONNECTOR				
	N510-1	TEL302-9	TERMINAL				
	N510-2	TEL302-9	TERMINAL				
	N510-3	TEL302-9	TERMINAL				
	N510-4	TEL302-9	TERMINAL				
	N901-1	TEL302-9	TERMINAL				
	N901-2	TEL302-9	TERMINAL				
⚠	PC821	ON3171	PHOTO COUPLER				
⚠	PC822	ON3171	PHOTO COUPLER				
⚠	PC823	HCNW4504	PHOTO COUPLER				
	Q16	UN11004	IC PROTECTOR(0.4A)				
	RL571	TSEH0012	RELAY				
⚠	RL901	TSEH0010	RELAY				
	S371	TAGA0005	SPARK GAP				
	S671	TAGDSP141T	SPARK GAP				
	S1051	TAGDSP141T	SPARK GAP				
	S1151	TAGDSP141T	SPARK GAP				
	S1251	TAGDSP141T	SPARK GAP				
	S1351	TAGDSP141T	SPARK GAP				
	S1355	TAGDSP201MF	SPARK GAP				
	S1371	TAGA0005	SPARK GAP				
⚠	SW801	ESB91274A	SWITCH(POWER)				
	SW991	EVQ33405R	SWITCH				
	SW992	EVQ33405R	SWITCH				
	SW993	EVQ33405R	SWITCH				
	SW994	EVQ33405R	SWITCH				
	TH801	ERTB6SFL100P	THERMISTOR				
⚠	TH901	TAP108M7RO	POSISTOR				
	TP5	TEL302-9	TERMINAL				
	X101	TAAA0005	CRYSTAL OSCILLATOR				